

AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

MAY 1, 1935



SOPHORA JAPONICA

Shelterbelt Planting Requires Nurserymen's Services

Patents Granted Nurserymen on Retail Plant Packages

Summer Planting Extends Selling Season in South

AMERICAN NURSERYMAN

Chief Exponent of the Nursery Trade

F. R. KILNER, Editor

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TREES FOR THE PLAINS.

The huge shelterbelt project described on the opposite page drew criticism and even ridicule when it was first broached, but the windstorms that have whirled away tons of soil in the plains states again this spring have wrought such serious losses that earnest attempts are going to be made in this vast undertaking. They are already engaging the attention of federal and state foresters, with nurserymen in the states involved lending their ready services.

It may not be realized that in 1934 a total of 164,000,000 trees were set out on state and national forest lands, according to the American Tree Association. Of these 86,204,000 trees were planted on state forest areas of more than 85,000 acres, while in the national forests 78,000,000 trees were planted on more than 77,000 acres. It is anticipated that in 1935 over 100,000,000 trees will be planted in national forests.

How much the shelterbelt planting will affect the total when the project is under way may be seen from the fact that most of the current forest planting has been done in the eastern states. The record goes to New York for 1934 with 40,564,282 trees. Wisconsin planted nearly 15,000,000 trees and Michigan over 12,000,000. Pennsylvania, Indiana and Minnesota each planted more than 3,000,000, while Massachusetts planted a few less.

How little planting is done in state forests west of the Mississippi may be noticed from the following figures for 1934 plantings: Minnesota, 3,000,000; Iowa, 110,000; Missouri, 25,000; North Dakota, 27,500; Nebraska, 7,000; Kansas, 700,000; Oklahoma, 7,000; Texas, 9,600.

One of the most valuable results of the government tree planting will be to make farmers of the west tree-conscious. For the number of trees placed in every government project, there are likely to be several times as many planted by the individual farmers whose lands are not touched by the government shelter plantings. This consideration should be foremost in the minds of nurserymen, particularly in that section, so that they may have suitable stock and be in position to assist the farmers in setting out their own shelter plantings. A vast market is opening there.

The Mirror of the Trade

BACK TO THE NURSERY.

The character and quantities of trees and shrubs for sale by department, hardware and other stores this spring are noticeably different from the past two or three seasons. The surplus stock which cash buyers picked up from nurserymen at distress prices is no longer available. The outlets that engaged in the distribution of plants when they could quote cut prices have lost their incentive. Government nursery inspectors have done their part, too. Those stores which have provided suitable quarters for the sale of nursery stock, maintaining it in good condition, are still in the business; they have usually put service and satisfaction above mere price, and their competition has generally been fair. The others are no longer engaged in the sale of nursery stock.

So the public is going back to the normal place for the distribution of plants, out in the open where they are grown. Nurserymen who have made it easy for purchasers to visit them, select their wants and receive suitable delivery are doing a larger share of retail trade. A show ground or garden assists greatly in the public's selection of plants. But even without this, the nurseryman who displays his merchandise attractively in packing shed and trenching ground cannot only develop a large cash-and-carry trade, but can also stimulate the interest of customers who may have purchased through his catalogue or salesmen. Let them become acquainted with the things you grow. As they see the various plants in leaf or flower, they will discover that they will want one of this or some of that. The public has been driving out to farms for eggs, milk and vegetables. Buyers have been brought to some nurseries by the hundreds, of a Sunday, when the weather is good. Now is the time when we may bring our customers back to the nursery and sell them stock that is sure to thrive, so increasing their interest and satisfaction in planting their home grounds.

FOR FIRMER PRICES.

Those in the horticultural trade in this country can echo the statement in a British periodical that, while sales are in some cases double, and even treble, those of a year or two ago, prices show little, if any, more firmness than under less favorable conditions.

Why is it so easy to depress prices on horticultural merchandise and so difficult to put them up again?

One reason is the intense competition in a perishable product, with the consequent ever-present fear that one will be left with an unsalable surplus if the other fellow gets more trade by lower prices. Few of those engaged in production have any idea of the available supply and consequently feel at the mercy of the buyer, whose disposition is to hammer the prices down.

The amateur element is largely responsible, being attracted by cut prices and having little regard for the comparative quality of the stock. It requires strong character and a good financial position to resist the pressure brought to bear.

Another barrier to firm prices is the lack of adherence to published quota-

tions. In too many instances, handsomely printed price lists are mailed out, with firm figures published therein, yet actual sales are made at concessions for one reason or another. We shall have achieved the most important step toward stable prices when those who publish catalogues will steadfastly adhere to the quotations in them.

Still another factor is the loose dissemination of trade prices. Some houses are quite strict in the separation of retail and wholesale trade. To others, a sale is a sale, and ready cash is the paramount consideration. The amateur who once buys from a trade price list is dissatisfied ever to buy at retail figures again. There are sound economic reasons for the differences between trade and retail prices, and the amateur, whether he be a small or a large buyer, should be made to recognize this.

In the absence of a code, market agreement or other trade authority, the establishment of firm prices on horticultural merchandise rests on our own sense of fairness and strength of character. The improvement in sales will be accompanied by improvement in prices, with possibility of a profit for all, if we seek to establish accurate prices and adhere to them.

SOPHORA JAPONICA.

A tree with as many good characteristics as has the Japanese pagoda tree, *Sophora japonica*, illustrated on the front cover, deserves to be more commonly used in American horticulture. It makes a good street tree, withstanding heat and drought well, but is equally adaptable as a lawn specimen.

The maximum height of the tree is about eighty feet, but it grows slowly, and the spreading branches form a round head. According to Hottes, old trees in China look like oaks. The plant is also native to Korea and has been grown for centuries around the pagodas of temples in Japan. The finely divided dark green foliage gives the tree a refined appearance, the 7 to 9-inch pinnately compound leaves being composed of seven to seventeen leaflets. In winter the tree is conspicuous because of its dark green branches.

The pagoda tree is slow in flowering, sometimes taking twenty-five to thirty years, but the creamy white pea-like blooms appear in loose panicles at the ends of the branches during August and September, followed by the fruiting pods in October. The seeds germinate readily when sown at once, but if planting is delayed until spring it is best to soak them first in hot water. There are a number of variations from the type, including the weeping scholar tree, as some call it, which is propagated by grafting onto stock of the typical form.

Sophoras respond best in a well drained sandy loam, but grow fairly well in rather dry soil. The pagoda tree is hardy as far north as Massachusetts along the eastern coast, but in the interior the northernmost range is approximately New York, northern Indiana and southern Iowa.

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AMERICAN NURSERYMAN

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The Chief Exponent of the American Nursery Trade

*The Nurseryman's Forte:
To Make America More Beautiful and Fruitful*

Vol. LXI

MAY 1, 1935

No. 9

Shelterbelt Planting Under Way

**Vast Government Project Started in Plains States Will Require
Nurserymen's Services for Completion According to Program**

The recent dust storms in the plains states to the west of the Mississippi have reverted attention to the federal government's shelterbelt project, of which there was much discussion in the public press last autumn, but little recently. Actually plantings have already been made, though the extent is small in comparison with the total contemplated when the project is completed. For the thousands of trees being planted this spring, millions will be put in the ground next year. To proceed according to program, it has been necessary to arrange with commercial nurseries for the planting of large quantities of tree seeds gathered last fall; so the trade has a vital interest in what is going on.

Nurserymen of the states through which the shelterbelt will run have been in contact with the offices of the forestry service in charge of this project, and particularly the head office at Lincoln, Neb. In that state the industry is fortunate to have two men like George A. Marshall, past president of the American Association of Nurserymen and a member of the committee on cooperation with the United States Department of Agriculture in regard to raw materials, and Chet G. Marshall, a member of the A. A. N. legislative committee. Their effective work is indicated by statements in the letter of Chet G. Marshall, following this article, which comes in response to an editorial in a previous issue. On the following page also will be found report of the lease of nursery land by the government for the production of shelterbelt plant materials. From this auspicious beginning, it seems apparent that commercial nurserymen will be called upon to play no inconsiderable part in the preparation of stock for this gigantic planting.

Commercial Nurseries' Part.

That much assistance from commercial nurseries will be required seems obvious from the magnitude of the project, if the contemplated schedule is to be carried out. This spring no more than 2,000,000 trees will be set out, because that is the number of tree seedlings available. To complete the project, in ten or fifteen years' time, 600,000,000 trees must be planted, or 40,000,000 to 50,000,000 per year. This does not take into account the replacement of those that die. In the Nebraska national forest, established by President Theodore Roosevelt thirty-one

years ago, 1,000 acres a year are planted and in an average year fifty per cent of the trees survive and fifty per cent die. Last year nearly all the trees set out were killed by the drought. It will be seen, therefore, that literally tons of tree seeds must be sown to provide stock necessary for the shelterbelt project. While government nurseries are being established in each of the six states involved, it will be impossible for them to get into the large-scale production required quickly enough to carry out the shelterbelt program.

The shelterbelt zone has been definitely surveyed and located. It lies in a strip 100 miles wide and 1,000 miles long from the Canadian border to the panhandle of Texas. It runs through the central portions of North Dakota, South Dakota, Nebraska and Kansas, along the western part of Oklahoma and into Texas.

Type of Planting.

It should be understood that there is no intention to plant this area solidly to trees. A shelterbelt planting within this zone is to be a dense plantation of trees of from eight to ten rods, or 132 to 165 feet, wide. The length will vary from one-half mile to five miles. The plan is for one linear mile of such shelterbelt for every square mile. A shelterbelt planting may run through the middle of a farm, along one edge of it or in the form of an L at the corner of a farm, or it may border a road.

Eventually the government will buy all the land upon which its shelterbelts of trees are planted. A linear mile of shelterbelt, from eight to ten rods wide, will require from sixteen to twenty acres of land. So far the government has been leasing the land, with an option to buy. Contracts have been made with occupants of adjacent farms to cultivate the young trees and to care for them until they have become established.

Arrangement of Trees.

The first plantings of trees are being fenced to keep out livestock. Between the side fence, which may be a mile in length, and the first row of trees is a vacant space a rod wide. Allowance of this space prevents the root growth of the trees from sapping the fertility and moisture of adjacent farm land and from shading it when they reach their full

growth. At the edge of the belt will be planted squat shrubs, such as wild plum, chokecherry, wild currant, mulberry, Russian olive, buffalo berry and lilac, which will be placed close together, at the rate of about 1,056 to the mile, so that they will make a dense thicket to catch and hold snow and blowing sand. The second growth, ten and one-half feet from the first, will be planted with elms, hackberry, honey locust, ash, oak and walnut, and the next row, fourteen feet away, will be planted with the same kinds of trees. In the fourth and fifth rows, each fourteen feet apart, will be planted cottonwoods and red cedars alternating, or yellow pines and jack pines in the north. These rows will be the middle of the planting, the lower trees and shrubs being arranged in similar fashion on the far side.

Vast Project.

How vast a project is this shelterbelt plan is to be seen from computations made by some persons to estimate the ultimate cost. It has been said that the actual average cost of each tree in the shelter zone, if the trees grow, will be at least \$1. The cost of land, labor, fencing, etc., runs into large figures. If an average of eighteen acres out of each square mile is planted, a total of 1,800,000 acres of land would be bought by the government for shelter plantings in the 100,000 square miles in the zone. At an average cost of only \$10 per acre, the cost of the land itself would be \$18,000,000. If the shelter plantings are fenced on both sides, 200,000 linear miles of fencing would be required; with three strands of wire, a total of 600,000 miles of wire would be required, together with something like 30,000 kegs of staples. If the fence posts are set twenty feet apart and cost 35 cents apiece, the 52,800,000 posts required would total in cost \$18,480,000. In addition, there will be the labor of digging the post holes and building the fence; so it is estimated that it will cost \$200 a mile to build the 200,000 miles of fencing, a total of \$40,000,000 for this item. The cost of gathering or purchasing the seeds with which to propagate 600,000,000 trees, with a liberal allowance—some say fifty per cent—for loss after the stock is planted, because of the unfavorable climatic conditions, will be no small one. The raising of the seedlings and production of suitable stock for planting will require further heavy

expenditure of government money. Because the devastating prairie storms again this spring have lent greater impetus to the project, an attempt to follow the schedule by which this huge planting would be completed in ten or fifteen years may well tax the facilities not only of government nurseries, but also of commercial tree nurseries that contract to grow seedling trees for the shelterbelt planting.

LETTER FROM MARSHALL.

Referring to your recent editorial headed, "Government Nurseries," in which you quote from the report of the Minnesota director of forestry and make other comments relative to the growing of stock for the plains shelterbelt project, I wish to make comment.

It seems that the soil-erosion control project and the plains shelterbelt project are more or less confused in the minds of a great many people. The shelterbelt project is being handled by the forestry service, while soil-erosion control work is under the Department of the Interior.

There are now being planted on commercial nursery lands 100 to 125 acres of broad-leaf species seeds in each of the several states in the shelterbelt area. The forestry service has leased this land from the nurserymen, along with all equipment, storage space, etc., necessary for the production of these seedlings. And the plan, so far, seems to be working very satisfactorily.

The nurserymen of the shelterbelt states have been in close contact with the forestry service office located at Lincoln, Neb., since early last summer, and the foresters in charge of the plains shelterbelt project have indicated from the beginning that they did not want to establish government nurseries, if suitable arrangements could be made with the nurserymen of these states to grow the seedlings needed, especially the broad-leaf species. Just recently I talked with one of these men in charge of the production of stock for the shelterbelt, and he again said that the regional office favors the production of stock by the commercial nurseries through this section and hoped that suitable arrangements for the coming year can be made with these nurserymen to produce the stock.

Under the present set-up it is impossible for the forestry service to make leases or contracts extending beyond the fiscal year period. It is hoped that arrangements will be made soon whereby plans can be made for one or two years in advance. Because evergreen seedlings require two years to make suitable sizes for transplanting, no contracts were made with commercial nurserymen for the growing of these. At present, the growing of these for the shelterbelt is being done at the national forestry nurseries at Halsey, Neb., established about thirty years ago, and at one or two points in Minnesota.

Your editorial is timely and it touches upon an important point. I feel, however, that with the right showing by nurserymen as to their ability to produce this stock, and with a cooperative attitude toward the government agencies, practically all of the stock produced for the shelterbelt can be grown on commercial nursery land. As stated above, I am sure that the foresters in charge of the regional office favor this plan, rather than the establishment of government nurseries. Chet G. Marshall.

LEASES NURSERY LAND.

The government has leased forty acres of land just south of York, Neb., from the Harrison Nursery Co., and the planting of seeds for trees will be started in the near future for use in the federal shelterbelt project.

The York tract is the largest of four nursery sites chosen in Nebraska for the growing of trees for the project. The principal varieties of trees to be grown on the York tract will be mulberry, honey locust, Chinese elm, American elm, Osage orange, caragana and wild plum.

Other tracts are located at Fremont, Arlington and North Platte. Only men with a knowledge of the nursery business will be employed on the project now, but later the project will furnish employment for unskilled laborers, said Carl A. Taylor, shelterbelt project nurseryman.

GROW PLANTS TO BIND SOIL.

In the fight to check soil erosion on depleted range lands in the national forests of the southwest, the forest service has established a nursery in cooperation with the Boyce-Thompson southwest arboretum. The nursery is located near Superior, Ariz., and is producing some forty-five varieties of soil-binding plants, many of which are valuable as forage.

Many of the old stand-bys among native growths of the southwestern mountains and semidesert ranges, such as Apache plume, mountain mahogany, desert willow, chamiso, grama grass, hackberry, wild grape and others, are being produced to reclothe barren and eroding areas resulting from overgrazing. During suitable planting seasons, shrubs, bushes, vines and grasses developed at the arboretum are distributed to national forest areas for use in erosion-control projects throughout Arizona and New Mexico. A quantity of hackberry seedlings and squawberry bushes was recently grown for planting for a quail refuge that the forest service is establishing, with the aid of the civilian conservation corps, in the Santa Rita mountains.

In addition to growing the native plants, a number of exotic plants with soil-binding and forage possibilities are being tested. The *Panicum antidotale*, a coarse perennial grass from the arid sections of northwest Australia, is regarded as the most promising of these. It has flourished in the arroyo-bottom soil, with a minimum of rainfall.

CALENDAR OF EVENTS FOR NURSERYMEN.

May 16 to 18, American Rock Garden Society, annual meeting and exhibition, Fleischmann park, Cincinnati, O.

June 4 to 6, Pacific Coast Association of Nurserymen, annual convention, Salem, Ore.

June 6 to 8, Portland rose festival, Portland, Ore.

June 19 and 20, Southwestern Association of Nurserymen, annual convention, Mineral Wells, Tex.

June 20 and 21, American Peony Society, annual exhibition and meeting, Boston, Mass.

July 16 to 18, American Association of Nurserymen, annual convention, Cincinnati, O.

AMERICAN NURSERYMAN

PRESIDENT NATIONAL MAIL-ORDER ASSN.



E. H. BURGESS.

E. H. Burgess, president of the National Mail-order Nurserymen's Association, is associated with his father and a brother in the Burgess Seed & Plant Co., Galesburg, Mich. In contact with the nursery business since boyhood, Mr. Burgess has been actively engaged in it since leaving college, in 1923. He is 31 years old, is married and has two daughters.

Mr. Burgess was a prime mover in the formation of the National Mail-order Nurserymen's Association, the nucleus of which was formed in the fall of 1934 by mail-order nurserymen representing a majority of the leading mail-order firms in Michigan, Indiana, Illinois and Ohio. The group is now meeting twice a month, as a result of which a friendlier feeling has developed among the nurserymen in the territory, consideration is being given to eliminating serious price cutting and fair trade practices are gaining attention.

In the Burgess Seed & Plant Co., Mr. Burgess holds an executive position. In 1914 this firm started business, issuing 10,000 catalogues. It is now estimated the catalogues go to over 1,000,000 families. A complete seed and nursery line is offered in the current 128-page catalogue. Customers in every state are supplied, as well as in 102 foreign countries. Modern storage equipment is maintained, with office, shipping and packing departments organized to give prompt service. As many as 7,000 orders have been received in a single mail; 10,000 orders a day can be handled. The service which the firm renders its customers has extended into the development of experimental and research departments, where varieties and cultural methods are tested.

THE Marlyne Nurseries were recently reopened at 1601 Shore road, Linwood, N. J., by Paul Fry. During the winter the establishment was destroyed by fire.

THE annual convention and trade exhibition of the American Cemetery Owners' Association will be held at the Hotel Statler, Detroit, Mich., July 28 to August 1. Roy Hatten, 504 Ypsi-Ann building, Ann Arbor, Mich., is secretary-treasurer.

Patents on Plant Packages

Improvements in Merchandising Stock Are Reflected in the Patents Secured by Nurserymen on Containers to Aid Sales of Plants at Retail

For several seasons past, packaging of plant products, small nursery stock in particular, to facilitate the sale of such merchandise through florists' and other retail outlets, has held the interest of the trade. A variety of ingenious methods for so handling the plants has been given trial. Generally these methods had it as their aim to prevent drying out of the roots and at the same time to provide an attractive merchandising item.

Several of these plant packages have been granted patents, according to information provided by Rummier, Rummier & Woodworth, Chicago patent lawyers, among these being the following:

Wire Mesh Container.

Patent 1,994,553 was granted March 19, 1935, to Herbert W. Wolcott, Jackson, Mich., on an application of February 10, 1933, covering a plant container (figure 1 in illustration), described as follows:

"A plant container, fabricated from wire mesh screening, comprising a bottom, integral winged portions on opposite sides of said bottom and integral side portions, said side portions being folded upwardly in one direction and said winged portions being folded upwardly and inwardly, the inwardly folded portions overlapping said side portions, the outer edges of said winged portions constituting the upper edge of said container being selvaged and adapted to be deflected inwardly upon the plant structure and soil."

Plastic Root Covering.

Patent 1,964,689 was granted June 26, 1934, on a "method of preparing nursery products for transplanting, compound and package therefor" (figure 2 in illustration), to Edgar M. Quillen and William J. Billerbeck, Waynesboro, Va., assignors to the Titus Nursery Co., Waynesboro, application having been filed February 10, 1933. The claim describes the process as follows:

"The method of packaging plants which consists in compressing about the roots thereof a plastic mass of suitable ingredients, tying the same into definite shape with elastic bands and inclosing and securing the compressed and tied mass in a waterproof wrapper, substantially as set forth."

Pliable Plant Ball.

For a "plant package and method of making and transplanting the same" (figure 3 in illustration), patent 1,923,677 was granted August 22, 1933, to John Thompson Lovett, Jr., Little Silver, N. J., who filed his application for the patent November 18, 1931. The claim reads in part as follows:

"A device including a plant ball, a container of pliable material for the plant ball, said container having a perforated side wall and a top opening, a removable cover for said container, said cover closing said perforations and rendering the container substantially moisture tight, and a closure for said top wall, said closure consisting of a self-hardening material set about the stem

of the plant and in engagement with a wall portion of the device."

John Thompson Lovett, Jr., Little Silver, N. J., was also granted patent No. 1,964,887 July 3, 1934, for a "resilient seal plant ball package," the application filed August 27, 1932, containing mention of the article (figure 4 in illustration) as follows:

"The method of maintaining a plant

which includes forming the roots thereof into a plant ball having a moisture-proof coating and a porous seal therefor around the plant stem, and coating the plant stem and impregnating said seal with a hygroscopic material."

Victor L. Rushfeldt, Albert Lea, Minn., received patent No. 1,994,962 March 19, 1935, for a "plant package and method of making same" (figure 5 in illustration), described as follows in the claim filed November 12, 1931:

"A plant package comprising a plant having a ball of moisture-absorbing material about the roots thereof and an elastic envelope encasing and constantly compacting said material."

Package in Box.

Patent 1,991,478, issued February 19, 1935, went to Ralph F. Wedge, Albert Lea, Minn., on a "plant package in box" (figure 6 in illustration), application for which was filed July 29, 1931, with the following description of the claim:

"A plant package, comprising a box formed of stiff sheet material, a body of plant-sustaining material disposed directly in the bottom of said box, said box having overlapping flaps at its bottom, the flaps above the bottom flap having holes therethrough, a waterproof adhesive disposed over said flaps beneath said material and extending through said holes to connect said flaps and seal the bottom of the box, whereby said bottom is kept dry and a waterproof bottom provided and a live plant disposed in said box with its roots in said material and extending upwardly in said box."

Issued March 12, 1935, to Hewett P. Mulford, Lebanon, O., was patent No. 1,994,400, on a "plant package" (figure 7 in illustration), application for the patent having been made December 1, 1931, with the following comment on the article:

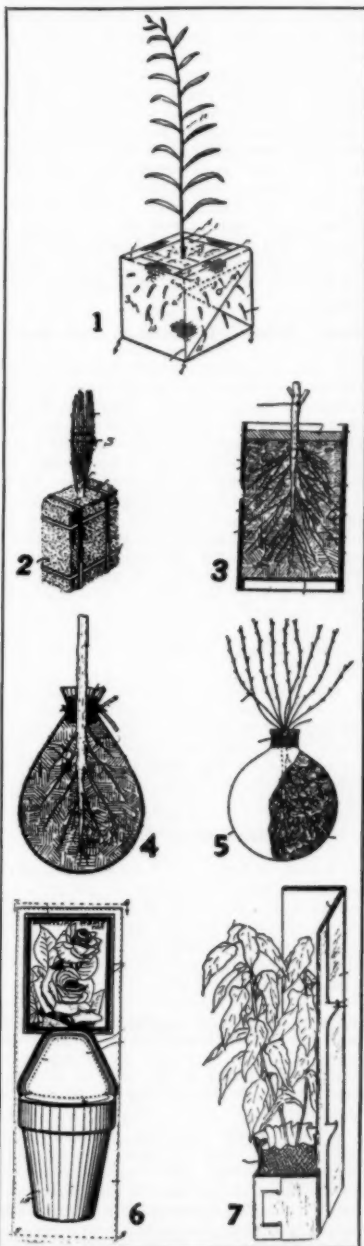
"A display carton for a potted plant, having pot-inclosing portions for locking around the lateral sides of the pot and independently foldable foliage-inclosing portions locking around said pot-inclosing portion."

With Hans A. Kessler as agent, a nursery at Red Bank, N. J., known as the Kessler Co., has been incorporated, with capital of \$20,000.

G. E. MacComber, nurseryman of Duluth, Minn., recently talked on "Home Beautification" before the members of the Farmers' Club, Thomson, Minn.

T. Kiyono, Crichton, Ala., will sail May 17 from San Francisco for a five months' visit in Japan. Mr. Kiyono, whose specialty is azaleas, reports that he has made more money this year than he expected, sales surpassing even those of the boom years, 1928 and 1929.

THE Valdesian Nurseries, Bostic, N. C., report that sales are running about 100 per cent better than last year. Letters from nurserymen among their customers in other states indicate that business for the last few months has been quite encouraging, and the outlook is for further improvement.



Various Plant Packages Patented.

Favors Summer Planting

**Selling Season Extended by Planting Methods,
Asserts W. C. Griffing, Texas Nurseryman**

Do not all say at once, "Summer planting and a year-around income are impossible." I forget just whose definition it was, but somebody defined "impossible" as "something very difficult for the ancients." When you look into the differential of an automobile, it is then that you think all things possible. Summer planting is not only possible, but the biggest asset to any nurseryman's business.

Bare-rooted trees cannot be transplanted after the sap has come up, but when trees are taken up with a ball of soil and the roots intact, they can be handled at any time of the year, it matters not what season.

Most of us are familiar with balling and burlapping, as the process is called. For the benefit of those who are not, it is one of the most wonderful adventures in the nursery and landscape business. A tree, shrub or plant is dug without disturbing the roots. Growth continues just as though that tree or plant had never been moved from the soil in which it originally grew. The surrounding soil which is lifted with the roots intact yields nourishment and serves as protection for the roots, until the tree or shrub is transplanted.

Old Season Too Short.

We used to think, as many others still do, that when we were digging stock bare-rooted and getting from 15 to 25 cents for a peach tree, when the sap went down we could commence digging and when the sap came up in the spring our season was closed. We would then cut half or more of our office and field force, in that way letting trained help go, and stop planting until the following November and then break in new help.

The nursery business is divided into departments—fruit, ornamental and so on. There are different methods in selling. Some firms sell through salesmen on the road, and then there is a general line of landscape planting locally that every nurseryman and florist have to take care of. Summer planting applies to the ornamental department and to those who have or should have a landscape department connected with their establishments.

We are looking to the modern home owners now and not the old-time buyers who planted four peaches in their back yard and three sycamores along their front walk. And with this class of buyers, their fancies come and go overnight, and when they get the home bee in their bonnet, then is the time we want to reach out and be of service to them in improving their surroundings, even though it is the first part of August.

Advantage in Summer Planting.

You may come to me and say that there is something in our coast country atmosphere or climate that permits us to move this stock at this time of the year, but it is far from such. With us, we move our stock directly from the field to the job, with hardly any losses.

When stock is handled in this way, the plants go to the customers with

leaves on them; the buyers like the immediate effect in appearance. They feel much better then about the spiræas, althæas, crape myrtle and many other of our deciduous shrubs than they would if they were put out in the winter months without a leaf on them. There is a great advantage in planting evergreen trees and shrubs in summer, for they will live much more readily when planted in the warm ground. By the time you finish your customers' jobs that you started in July (midsummer), the bushes that have already been put in have made, under the increase of water and attention given them, a good growth, and they are in a much better condition to stand the winter's cold and the following spring's drought than if they had been planted during the winter months, and your customers immediately become interested. The consequences are that in the wind-up they think that they have done as much toward the building and beautification of their place as yourself, and there is an interest manifested that makes them happy.

Make Present Investment Pay More.

I feel as though a commercial salesman could come along and lay before you something as a side line that would care for your labor situation in the summer and most of you would take on an expenditure of from \$1,000 to \$5,000 in enlarging your business. Now, I have a far different proposition. Your packing sheds are built; your help is already lined up; your trees and bushes are grown. And instead of investing that \$1,000 to \$5,000, let us get on the job, with a little close observation, and give summer planting a thorough and fair trial. If we all do it, it will soon become a habit, and the trade will demand it.

Our prettiest yards here are planted in midsummer and people think us strange or wonderful, for a few years back they could not conceive the idea of planting a big bush or tree even in the winter, to say nothing of the summer.

Times Have Changed.

I used to feel as if I wanted to carry my catalogue in my inside pocket, because I did not care to have some people I saw come and go know that I was in the nursery business. But today is different—people are traveling and seeing pretty plantings. Gardens are a topic of conversation at tea parties and garden clubs. The Ladies' Home Journal, the Home Beautiful and other papers of their type are devoting from one to five pages to the subject and the nursery trade is getting to be a real profession.

The average old tree salesman cannot go out and interest a man in a \$2,500 planting. For these reasons, it is up to us to put our whole hearts and souls into the business. We must study ourselves and teach our employees in open discussion. Teach them to speak of the acuba as a pretty little plant from the Himalaya mountains in Asia,

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and the Cedrus Deodara as the little cedar that Kipling writes so many pretty stories about, and so on. For you know, as well as myself—and the fact has never been different—that if you do not know more than your customer, you stand a mighty poor chance of getting his attention.

Comparatively speaking, there are only a few landscape gardeners and nurserymen, so far, who have adopted the practice of summer planting. But it is rapidly coming to the front.

ROSE REGISTRATIONS.

Applications for registration of the following new roses have been approved by the registration committee of the American Rose Society:

Dorothy Marie. Hybrid tea. Originated by Peter Scitline and introduced by Fred Lainsan, Council Bluffs, Ia. Another sport of Tallman, reported to have large fragrant flowers of dark crimson pink, with a silvery orchid sheen and a gold spot at the base of the petals. The originator considers the flower similar to Mrs. Fred Lainsan; it differs chiefly in its color, which is durable and does not fade.

Happy Days. Hybrid tea. Originated by Martin C. Amling, Pana, Ill., and introduced by the Amling Rose Co., Pana, Ill. Reported to be a sport of Briarcliff, which it resembles, differing in its bright geranium lake color, better form and buds and delicate fragrance. The originator also thinks it has better lasting qualities than Briarcliff, holds its color better regardless of season and comes back quicker after being cut.

Stratford. Hybrid tea. Originated by J. H. Nicolas, Newark, N. Y., and introduced by the Dixie Rose Nursery, Tyler, Tex. Raised from a seedling of La France pollinated with Marechal Niel. Flower resembles La France, with luminous pink petals and a salmon overcast. The plant is vigorous and grows into a handsome everblooming shrub four to five feet high where the winters are sufficiently mild.

San Francisco. Hybrid tea. Originated by J. H. Nicolas and introduced by the Jackson & Perkins Co., Newark, N. Y. Originated from a seedling raised from Radiance crossed with Golden Emblem, which was in turn crossed with Harmony. Reported to be of unique type, harder than the average hybrid tea, with a glowing orange bud and a flower of a sunset color—brilliant gold-lined orange which gets deeper as the flowers age. The originator thinks it is peculiarly adapted to growing on the Pacific coast.

Rocket. Hybrid tea. Originated by J. H. Nicolas, Newark, N. Y., and introduced by the Jackson & Perkins Co., Newark, N. Y. Raised from Dame Edith Helen crossed with Scorch. Flower resembles E. G. Hill, with a brilliant scarlet center and crimson outer petals. The flower is large, with seventy-five petals, and has an old rose fragrance. It is believed to be better than E. G. Hill because of stronger growth, stiffer stems and fewer blights in greenhouse cultivation.

A. A. N. SECOND CALL.

Secretary Charles Sizemore has sent to members of the American Association of Nurserymen the second call for dues for the ensuing year and for advertisements for the badge book to be distributed at the convention, to be held July 16 to 18 at the Netherland-Plaza hotel, Cincinnati, O.

The secretary states that whereas last year thirty paid their dues in response to the first call, this year the number is thirty-four, adding, "We believe this shows an uplift in business, and further reports now being received from the various nurserymen also indicate better conditions than last spring."

BUSINESS EMBARRASMENTS.

East Boxford, Mass.—Harlan P. Kelsey, Inc., filed a petition March 29 in the United States District court under section 77B of the bankruptcy act for the reorganization of the corporation. A hearing was held April 22 on the order entered April 1 continuing the debtor in possession of its estate and authorizing it to operate its business. At the suggestion of Harlan P. Kelsey and with the consent and approval of a majority of the creditors, Harris S. Knight has been elected treasurer.

Building the Rock Garden

Construction of Paths and Steps Is Discussed in the Fourth Article of This Series by William H. E. Beckstrom, F. R. H. S.

Paths assist greatly in making the rock garden more livable. They bring the observer into closer contact with the important features of the rock garden, such as interesting plantings or water effects. Needless to say, with a rock garden in a naturalistic style, a formal path would be incorrect. Paths should be considered thoroughly at the time of planning the rock garden, so that their addition will be as interesting as possible.

Paths offer a means of varying the exposures among the rock formations. For example, a path running roughly southwest to northeast will give the adjacent rock banks exposures to the southeast and northwest, which they would not have if the path were omitted from the plan. A well laid out path should render all parts of the rock garden accessible for watering, weeding, planting, etc.

The path should be gently and unsymmetrically curved, and at times parts of it should be out of the range of vision. A bold outcropping will perhaps cause the path to turn. The result of this would be to arouse the curiosity of the person walking and cause him to round the outcropping hastily in an effort to see what lies beyond. Such details as this give a planting interest.

Path Foundation.

Inasmuch as the path will in most cases be on a lower level than the surrounding area, provision should be made for perfect drainage. A 6-inch thickness of cinders will form a solid and well drained base upon which to set the path stones. An inch or so of sharp sand on top of the cinders will enable the builder to level the stones perfectly.

In placing the stones, set them firmly. Be assured that the entire base of the stone rests solidly upon the sand so one can step upon the very edge of the stone without moving it in the least degree. A person keenly interested in the surroundings is likely not to watch his step and stones with edges rising above their neighbors are then a hazard.

With an irregular path, there should be a variation in its width. The width may vary from eighteen inches to four feet and more.

Paving Plants.

Place the stones so that an average person will step from the center of one stone to the center of the next or take two easy steps on any one large stone. This will eliminate the necessity of taking difficult half-steps to avoid cracks. Keep the stones close together; gaps greater than three inches are hazardous. The interstices may be utilized to advantage by planting them with dwarf and tufted plants such as the following:

Acena macrophylla
Acena sanguisorba
Antennaria tomentosa
Antennaria neodica
Arenaria caespitosa
Arenaria purpurascens
Arenaria verna
Arenaria verna aurea

Aubrietas in variety
Cerastium tomentosum
Dianthus arvensis
Dianthus deltoides
Dianthus graniticus
Hypericum repens
Hypericum polyphyllum
Linaria origanifolia
Mazus reptans
Sempervivums in variety
Thymus asoricus
Thymus lanuginosus
Thymus serpyllum
Thymus serpyllum coccineum
Thymus serpyllum album

The stone used should be of the flagstone type, having a uniform thickness of two to four inches. The stone may be from eighteen inches up in width. Stones smaller than eighteen inches are difficult to set firmly. Stone used in the path should preferably be of the same type as that used in the rock garden proper, its only difference being in its shape.

Steps.

Steps in formal or semiformal designs are not discussed here. These notes are concerned only with steps suitable for rock gardens.

Variation in the levelness of the path is taken care of by the use of steps. Gradual slopes can be cared for by merely using the thickness of a single stone as a riser. In such cases the weathered edge of the flagstone should be used as the face of the riser. It may be well to note that risers whose thickness is greater than five inches may cause discomfort to one engaged in mounting the steps. If it is necessary to use a higher step, stones of greater thickness should be used.

Steps are best represented as being a definite part of the rock garden. The step may be a continuation of a ledge which runs through a part of the rockery, the face of the ledge forming the riser. It is desirable not to have steps in the rock garden really appear as such.

The tread should rarely be less than eighteen inches in width, although it may be desirable at times to allow a greater width. If such is the case, allowance should be made for the one engaged in walking to take a full pace on the level before stepping up again.

It has been common practice to construct risers wall-fashion, using small pieces of flagging. The writer believes this type of construction is best left to formal or semiformal arrangements. In the rock garden, this style looks like an attempt toward artificial construction—a note to be avoided. However,

The fourth of a series of articles on rock garden planning and construction to be featured in The American Nurseryman appears on this page. Plans, stone handling and construction points have been discussed; the next installment will be concerned with the treatment of level areas and of dripping walls.

should the wall-type construction be used, provision should be made for the inclusion of suitable plants among the crevices of the stones used as risers.

Another type of step, which is perhaps best applied to the woodland section of the rockery, is that using logs. For durability, log risers should preferably be of cedar. The method is to use a 4 to 5-inch log, with the bark intact, as a riser, driving 3-inch stakes of the same material in front and to each end of the log riser. The space in back of the riser is then filled to within two inches of the top of the riser with cinders or gravel. The remaining two inches are then filled with tanbark or some other suitable material to form the tread surface. If the site is shady, moss will soon cover the logs and a most delightful effect will result.

WIND SPREADS ELM DISEASE.

Recent experiments by the United States Department of Agriculture show that the Dutch elm disease may be carried by the wind. In department laboratories the disease has developed from spores carried forty feet by air currents. It is possible that when wind-carried spores lodge in a favorable place, such as a fresh wound in an elm tree, infection may result. Previously, the smaller European bark beetle has been the only proven carrier of this disease in the United States.

The only known area of serious infection in the United States is within a radius of fifty miles of New York harbor, where more than 7,600 elm trees with the disease have been found.

Experiments proving that Dutch elm disease may be transmitted by air currents were made by S. J. Smucker, of the bureau of plant industry.

PLANTING WILL BE HEAVY.

Successive trade lists show the scarcity of nursery stock. Of some items there is an ample supply, but many varieties have disappeared from the lists one after another in the past month.

In the Jewell News Flash, issued by the Jewell Nursery Co., Lake City, Minn., appears the statement that "already there are evidences that the total planting this spring will be greater than for many years past."

Planting conditions have been excellent in most parts of the country this spring. Nurserymen have more time than usual to make sales to the public. Their own plantings will be heavy to make up for current shortages.

FOUR states already have laws establishing a system of unemployment insurance. The Wagner-Lewis bill now being considered by Congress is a federal measure providing for unemployment insurance. The laws of New York, Utah and Washington levy contributions upon employers of four or more workers; the Wagner-Lewis bill taxes only those who employ ten or more.

Nursery Legislation

Current State Statutes Affect Trade

TEXAS LOAN BILL PASSES.

Texas nurserymen will be enabled to obtain loans from the Farm Credit Administration through the Production Credit Corporation by the passage of the amendment to article 4000 of the state statutes. W. C. Griffing, chairman of the legislative committee of the Southwestern Association of Nurserymen, reports that house bill No. 750 and the concurrent senate bill No. 406 have been passed by the respective bodies and sent to the governor for his signature. This will enable nurserymen to make mortgages on nursery stock and so obtain government loans.

The legislative committee is now devoting its efforts toward getting the tax bill, house bill No. 853, to a vote and asks the further support of nurserymen in the state. This bill will reduce personal property taxes on nursery stock.

MINNESOTA NURSERY LAWS.

Several bills of horticultural import have been and are before the legislature in the state of Minnesota. Some of these have already been passed and signed by the governor.

A measure of great interest to nurserymen, now a law, is one which provides for the licensing of nonresident nurserymen and requires all agents selling nursery stock or soliciting orders for nursery stock to secure agents' certificates. Another measure, not yet law, will hit any nursery failing to take proper steps to control insect pests and diseases. The bill is not aimed at nurserymen's stock alone, as it includes provisions mentioning bee diseases and rodents. The board of commissioners in any county is empowered by this act to appropriate money for the control of pests and to make assessments against any property on which control measures have not been carried out according to rules and regulations prescribed by a supervisor appointed by the county commissioners and acting under the direction of the state entomologist.

Another bill aims to curb unauthorized persons from going onto public or private land, ruthlessly digging up plants and offering them for sale. It provides that if a nurseryman intends to grow gentian, lotus, arbutus and some other plants he must register this information with a state official.

IDAHO LICENSE LAW.

Nearly ninety licenses have been issued to Idaho florists and nurserymen under the provisions of a new state law recently signed by Governor Ross. The measures were explained to nursery stock dealers at Gooding, Ida., April 11, by W. H. Wicks, director of the state bureau of plant industry. David Petri, Boise, president of the Idaho State Nurserymen's Association, accompanied Mr. Wicks to Gooding.

According to the new law, florists or nurserymen whose gross business amounts to more than \$200 annually must obtain a \$1000 bond and pay a \$15 license fee, Mr. Wicks said. Those whose business is more than \$50 and

less than \$200 need not post bonds, but must obtain an annual license at a cost of \$5, he said.

Those who do less than \$50 gross business and do not advertise need not obtain licenses or post bonds.

Any business concern not primarily engaged in the florists' or nursery business must obtain a license to sell nursery or floral stock, regardless of how little is sold.

A foreign company selling in Idaho must have its products inspected unless it or the consignee has a license.

The law does not pertain to farmers or others engaged solely in the production of garden vegetables, such as tomatoes, peppers, cabbage and similar plants, and who offer such plants for sale, Mr. Wicks explained.

Farmers who advertise and sell strawberry, raspberry and similar plants, even though they do business totaling less than \$50 annually, must obtain \$5 licenses, but need not post bonds.

There is a close distinction between plants which are produced from seed each year and die at the end of a season and those that live from year to year, the director noted.

PRICES REVISED LOWER.

Under Washington State Code.

Prices of plants under the Washington state nursery code law of 1935 have been revised downward, compared with the 1933 A. A. law, which was held invalid the second week in April by the state Supreme court, according to Howard E. Andrews, Seattle, Wash., chairman of the control board of the Washington state nursery code.

Mr. Andrews addressed a meeting of nurserymen, greenhouse owners and retail plant dealers at Spokane, Wash., April 12. Because of the late spring season, plant sales were just opening and growers and dealers attended in large numbers to get the latest word from headquarters.

Vegetable plants have been entirely eliminated from the nursery code. Mr. Andrews reported that after an inspection of Spokane plant retail outlets he had observed a tendency to place the cheaper varieties of flowering annuals, such as snapdragons, at 20 cents per dozen, which is a few cents above the minimum allowed by the code. He complimented dealers on this showing, which he said evidenced a tendency to abide by the code.

Some of the retailers present complained of the small margin allowed retailers, fixed by the code at ten per cent. Mr. Andrews explained that the Washington agricultural adjustment act is intended primarily to protect growers and that the N. R. A. has been designed for the commercial field. He thinks in the end retail sale of plants will be centered in the hands of growers.

Grades will be established on the various types of nursery stock. Mr. Andrews said he found but little nursery stock on sale in Spokane that had the grades attached.

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Norb Balzer, chairman of the Spokane plant commodity committee, presided. He favored some action for compulsory spraying of all trees in the city, the work to be done by persons engaged in that business and not by the park board.

WESTERNERS PLAN FAIR MEET.

The California Association of Nurserymen will hold its twenty-fifth annual convention next fall in conjunction with the California-Pacific international exposition in San Diego. The quarter-century celebration of the nurserymen is scheduled for September 26 to 28, with George F. Otto, San Diego, program chairman. September 28 has been designated as commercial plant industry day in the series of exposition activities, and the program for that occasion will be both instructive and entertaining.

Officers of the California Association of Nurserymen for 1935 are: President, R. D. Hartman, San Jose; vice-president, H. A. Marks, Los Angeles; secretary, Henry W. Kruckeberg, Los Angeles, and treasurer, Jess C. Watt, Ontario. On the board of control are George C. Roeding, Jr., Niles; J. E. Bergthold, Newcastle; Roy F. Wilcox, Montebello; H. A. Marks, Los Angeles; John A. Armstrong, Ontario; R. E. Page, Beverly Hills; Toichi Domoto, Hayward, and S. Nishida, Los Angeles.

NORTH JERSEY NURSERYMEN.

A regular meeting of the North Jersey Metropolitan Association of Nurserymen was held in the Bergen county courthouse, Hackensack, N. J., April 9. Three new members made application to join: E. A. Mallette, 160 West Newell avenue, Rutherford; Otto Werdell, 570 Grand avenue, Ridgefield, and W. Vanes, 12 Clove road, Upper Montclair.

There was a discussion on the type of sign each member would use to display the association's emblem at his place of business. Finally all agreed on decals, manias, or transfers, easy to mount on trucks and windows. The association is running ads in newspapers, boosting the emblem for the benefit of its members.

Raymond Stone, agriculture agent of Bergen county, commented on the work done in landscaping the Passaic county courthouse. He also offered his assistance in helping the planting committee to carry out a similar plan in Bergen county. He offered the use of WOR broadcasting station to the members who have ambition to talk over the air, in connection with his regular broadcast. A committee will carry out this work at the proper time.

C. A. Kievit, chairman of the planting committee, thanked the members for their cooperation. A motion was made by Mr. Grootendorst, seconded by H. Deverman, to give the committee a rising vote of thanks.

The question box proved a huge success. One suggestion which the executive committee will work on is the publication of a monthly leaflet of timely hints to be sent out by members to their customers. This, it was felt, could educate customers to prune and spray at the correct times.

After the meeting, the members adjourned to a near-by tavern and enjoyed refreshments.

William Halliey, Sec'y.

Shrubs and Trees Now in Flower

Woody Plants That Came into Bloom at End of April
in Central Ohio Are Described by L. C. Chadwick

Continued cold weather has further delayed the blooming period of many plants in central Ohio. A season which started about three weeks earlier than normal has now reached a stage where blooming periods are nearly the same as have occurred during the past five years.

Mid-April produced blooms on but few woody plants. Many that were in flower have either passed their most effective period, or the flowers were injured by the low temperature of 21 degrees Fahrenheit on April 16. The flowers on *Magnolia Soulangeana* were entirely destroyed, and there was some indication that the freezing temperature caused injury to the terminal twigs. The flowers of the common pear, *Pyrus communis*, which were almost fully developed, were less severely damaged, and they were still effective. Other fruits were not extensively injured by the freeze in central Ohio. *Cercis canadensis* had its flower buds, which were nearly open, severely injured. On many plants few, if any, flowers will be produced. *Kolkwitzia*, the beauty bush, was somewhat damaged, but less severely, because the flower buds were not so fully developed.

In most cases the freeze did not cause extensive damage to the young developing foliage of the woody plants. On the campus of Ohio State University the most severe damage to foliage appears to have occurred on *Kolkwitzia amabilis* and *Spiraea Vanhouttei*, less severe on *Acer Ginnala* and *Spiraea Bumalda*, and slight on *Berberis Thunbergii*, *Deutzia gracilis* and *Lemoinei*, *Lonicera Korolkowii*, *Maackii*, *Morrowii*, *tatarica* and *Xylosteum*, and *Rhodotypos kerrioides*. The foliage of *acanthopanax*, *caragana*, *cotoneaster*, *cydonia*, *evonymus*, *ligustrum*, *malus*, *ribes*, *syringa* and the *virburnums* escaped without injury.

Among the outstanding woody plants blooming during mid-April were *amelanchier*, *cercis*, *mahonia*, *pyrus*, *ribes* and *Viburnum fragrans*. A number of the flowering cherries have still continued in flower. One of the more uncommon but effective is *Prunus incisa*. This plant is a large shrub or small tree up to thirty feet in height. The flowers are rather small, one to three borne in a cluster, and are pinkish white in color.

Cydonia continued in flower on April 20, and with the leaves of this plant about half-developed, it was really the outstanding plant in flower at that time. The flowering crabs were just starting to bloom. *Malus purpurea* was in flower and many of the other apples followed within a short period.

Amelanchier.

One of the most widespread genera of native plants is *amelanchier*. Varying in size from bushy shrubs, four feet in height, to small trees, forty feet or more, they are extremely useful for native plantings. The flowers are produced before or accompanying leaf development and consequently are showy even though they are relatively small. The three most common tree forms are *A. canadensis*, *levis* and *oblongifolia*. The first to flower is *A. canadensis*. This

species may be tree form or bushy with a number of stems arising from the base. The young leaves, produced after the flowers, are densely woolly-hairy on both sides. *A. canadensis* is adapted to dry, well drained soil and is often found growing naturally on the banks of steep ravines. Its branching habit is strongly horizontal, especially in old specimens. *A. levis* and *oblongifolia* flower at about the same time, and the blooms are accompanied by the unfolding leaves. The young leaves of *A. levis* are glabrous, while those of *A. oblongifolia* are hairy only on the underside. Both types seem to do well in ordinary garden soil, although under natural conditions *A. oblongifolia* prefers cool, moist slopes, while *A. levis* accompanies *A. canadensis* in drier locations. *A. levis*, the Allegheny shadbush, is the most attractive of the common *amelanchiers* in bloom, and it forms the most attractive plant for landscape purposes.

A more uncommon type is *A. grandiflora*, a hybrid, the parents of which are *A. canadensis* and *A. levis*. A red-flowering variety, *rubescens*, produces an abundance of blooms and is a promising type. The shrubby forms of *amelanchiers* are not often seen other than in their native habitats. The most attractive species are *A. amabilis*, *humilis*, *sanguinea* and *stolonifera*. These types flower about the same time or a little later than *A. levis*. A type intermediate between the bushy and tree forms, which seems to thrive under garden conditions, is *A. spicata*. This species is, however, less attractive in flower than most of the tree forms. Propagation of the *amelanchiers* may be by seeds or root cuttings.

From work done at the Boyce Thompson Institute, it would appear that seeds of *Amelanchier canadensis* should be stratified for a period of about ninety days at a temperature of 40 to 45 degrees Fahrenheit for best results. Other types probably react similarly. The shadbushes are not exacting in their soil requirements. They do well in average garden soil, but for the most part, prefer relatively cool situations.

Cercis.

The rosy pink to purple flowers of the redbuds are striking in early spring. They are produced before the leaves and are showy in bud, as well as in full flower. Two species are now quite common in the trade, *Cercis canadensis* and *Cercis chinensis*. *Cercis canadensis* becomes a small tree, up to thirty feet or more in height, and frequently develops a number of stems from the base of the plant. Its habit of growth reminds one of *Amelanchier canadensis*, and the two combine well in naturalistic plantings. A third native plant to add to such a group is the flowering dogwood.

Some variation exists in the flowering habit of the redbud. From the Missouri Botanical Garden I learn that a double-flowering form, *plena*, as well as the white variety, *alba*, occurs natively at Gray Summit.

The Chinese redbud, *Cercis chinensis*,

is usually considered to be more attractive in flower than our native type. The flowers are darker, somewhat larger and usually produced more abundantly. The Chinese redbud is almost always bushy, with a number of stems from the base of the plant. The two types may be distinguished by the fact that *Cercis chinensis* has leaves with a transparent margin.

The redbuds are moved with difficulty and should be transplanted when young or moved with a ball of soil. Wrapping the trunks with burlap should be practiced when specimens are moved.

Mahonia Aquifolium.

Although *Mahonia Aquifolium* is not often used as a flowering plant, its yellow flowers partly hidden by the foliage are attractive when seen at close range. Two forms of the Oregon holly grape exist in the trade, one having glossy, dark green foliage and the other dull and usually somewhat bluish green foliage. The latter type is distinctly upright and should not be confused with *Mahonia repens*, the creeping type. The glossy-leaved form is to be preferred, as it is much more attractive the year around. To prevent severe burning of the foliage, as often occurs in warmer climates, it should be used in partial shade. Even in such a condition the foliage takes on a purplish, but not unattractive, tinge in the fall. This plant is not at all particular as to soil type; it even thrives well if used in dry, sandy situations. Propagation is best by seeds, although suckers and layers may be used where sufficient plants are available.

Pyrus Communis.

The common pear, *Pyrus communis*, has a good many points to commend its use as an ornamental plant. Its habit of growth is broad pyramidal and quite compact when the plant is grown under good conditions. Its white flowers are produced abundantly just before the leaves unfold. The plant makes a good growth and thrives under a wide range of conditions. The foliage turns purplish scarlet in the fall. Since the plant may be used for both its fruit and as an ornamental, it should find a wider use on the average-size place where room will not allow employment of both types of plants.

Ribes Odoratum.

The golden currant, *Ribes odoratum*, is a plant that can be used in almost any situation in the landscape planting, but possibly best in situations where few other shrubs will prove satisfactory. It finds ready use on dry embankments, where it suckers enough to hold the soil well. If specimen shrubs are required, considerable pruning will be needed. It is better when used in masses, for less attention is required to keep the plants satisfactory, and much of their effectiveness comes from the spreading habits. It tolerates shade as well as sun. The yellow, fragrant flowers are attractive, although partly hidden by the half-

developed leaves. Propagation can be easily accomplished by hardwood cuttings or by the divisions of suckers.

Viburnum Fragens.

Although I have discussed this uncommon plant in some of my previous articles, I cannot refrain from mentioning *Viburnum fragens* again at this time, as it is the earliest of the viburnums to flower. Our plants at Ohio State University are too small to flower, but this species has been observed in flower prior to April 15. The fragrant flowers, borne in clusters, rival those of the popular *Viburnum Carlesii*. They are pink in bud, but when fully open become almost white. The plant is a more vigorous grower than *V. Carlesii*, probably reaching eight or nine feet at maturity. In habit of growth it is quite narrow and upright. When used as a specimen or as an accent in the border, it is among the most effective of the early-blooming plants.

REVIEWS MOSBAEK CAREER.

April 7, the Duluth, Minn., News-Tribune published the portrait of Ludvig Mosbaek, proprietor of the Ferndale Nursery, Askov, Minn., along with a résumé of Mr. Mosbaek's active life in his community. Among the first settlers in Askov, Mr. Mosbaek, who celebrated his eightieth birthday anniversary April 13, went there from Denmark in 1906, purchasing land for a farm.

As a youth, Mr. Mosbaek had absorbed strong ideas regarding the value of cooperative institutions. In Denmark he had been the manager of one of the first cooperative stores developed under a system that has been worked out in most successful manner by agricultural elements in that kingdom. The second year after his arrival in this country, Mr. Mosbaek promoted a farmers' club and organized a mutual insurance company. The following year he organized a cooperative feed store and a pure-bred bull association. He was also a moving spirit in developing a cooperative creamery and egg-marketing organization. One of the first in this country to grow rutabagas and compete successfully with Canadian exports of these vegetables, Mr. Mosbaek was also interested in potato growing and marketing.

In predepression years, Mr. Mosbaek shipped out from the Ferndale Nursery trees, shrubs and flowers totaling \$36,000 annually. As much as \$6,000 was received in a single year from the sale of roots of native ferns dug from neighboring woodlands. Most of the income went into building up the nursery, and the establishment now occupies about 300 acres, well planted.

Retired from active work in the nursery, Mr. Mosbaek retains general supervision. He is an Arrowhead honor roll farmer and a member of the farmers' advisory group of the Duluth chamber of commerce. He is keenly interested in economics, being strongly in favor of a single tax and considering the unencumbered farm the best remedy for economic distress and unemployment.

MARINUS VAN DER POL, formerly connected with the nurseries at Framingham, Mass., of Bay State Nurseries, Inc., has started a nursery at Fairhaven, Mass.

New Books on Gardening

Reviews of Recent Books of Trade Interest

NEW EDITION OF "HORTUS."

When the monumental Standard Cyclopedia of Horticulture was out of print, the author of that great work, Dr. L. H. Bailey, had compiled the book which succeeded the cyclopedia as a work of horticultural reference. This was called "Hortus, a Concise Dictionary of Gardening and General Horticulture." Its appearance in 1930 was welcomed by all those who have to do with plant names, from catalogue makers to gardeners. The sale was of such proportions that reprinting brought the original price of \$10 down to half that figure.

After five years, a new and revised edition has been brought out, with 100 pages of supplement. The latter records the plants introduced into cultivation in North America outside botanic gardens and similar institutions under regular specific names and as Latin-named varieties, or that have acquired public interest as horticultural subjects in the five years 1930 to 1934. This is in accordance with the intention expressed by Dr. Bailey in his preface to the original "Hortus," that "a new inventory should be published together with a review of the progress in plant knowledge in the intervening years." Entries in the supplement are of two kinds: (1) Genera already included in "Hortus" and of which a new generic description is not required, and (2) genera newly admitted and therefore with brief introductory accounts or indications. Aside from genera new to the work, five families are added.

With this supplement, "Hortus" so thoroughly covers the nomenclature of plants in gardens, nurseries and greenhouses that every grower, commercial or amateur, may rely upon it as a complete and authoritative reference book. Through its use we may avoid the confusion and difficulties that arise from the careless or inaccurate use of plant names, from misspellings and from duplications of names. Constant use is made of "Hortus" in the office of The American Nurseryman, so that the recommendation here comes from first-hand knowledge of its practical value.

HOME LANDSCAPING.

Because the landscape picture is never really finished and will not long retain its beauty unless cared for intelligently, home owners should develop an appreciation and judgment of outdoor beauty and landscape design which can be gained only by some knowledge of the principles and practices that form the background of the art of landscape architecture. This is the theme on which M. E. Bottomley constructs a simple comprehensible exposition of landscape architecture as opposed to simple gardening in a recently issued book, "The Art of Home Landscaping," published by the A. T. De La Mare Co. The volume is well worth recommending to interested customers and useful for reference by those engaged in the work described.

Something more than a knowledge of materials is the author's requirement of

the landscape designer. The latter must also know something of design and its effective execution outdoors. He should also know how the practical phases of landscape design can best be executed and be enough of a horticulturist to understand how plants grow. An introduction to all three avenues of study is provided in Mr. Bottomley's book.

An important feature of the book is the specific nature of the recommendations. The reader can learn what to do to make a high wall or terrace appear lower, to widen the effect of a tall house, to emphasize a building or to subordinate it. How to select materials, how to adapt them and how to proceed with the work are all clearly handled.

Chapter one contains the preliminary survey of the field, giving some of the history of landscape architecture throughout the world. Chapter two contains the pith of the author's remarks on composition in landscape design, providing explanations of frequently used terms and rules.

Chapter three offers suggestions for home landscaping, with ideas for developing the yard areas, rock gardens, pools, etc. "Horticulture of Landscape Architecture" is the topic of chapter four, in which there are comments on plant growth, planting, bulbs, pruning, diseases and insects, fertilizing, etc. To conclude the book, chapter five discusses "Community Improvement," covering the treatment of parks, playgrounds, cemeteries, roadsides and similar areas.

Sixty-odd sketches illustrate concepts offered in the text. George Roth, Jr., is the artist, and the reproductions include numerous garden designs by the author. The book consists of 239 pages, indexed at the back, and is cloth-bound. The price is \$3.50 per copy.

FLOWER BORDERS.

Based on the thesis that the herbaceous flower border adapts itself admirably to American conditions and is in fact open to innumerable treatments to provide stunning pictorial effects, "Color and Succession of Bloom in the Flower Border," by H. Stuart Orloff and Henry B. Raymore, offers one of the few comprehensive treatises on border plantings that have been published. The book, written by two practicing landscape architects well qualified to handle the subject, was recently issued by Doubleday, Doran & Co.

Succession of bloom and pleasing combinations of color are stated as the two major accomplishments possible in the border. The book tells in simple and effective manner how these ends can be achieved. Also discussed are the manner in which the border can replace other types of gardens, styles of backgrounds, plant selection, soil and maintenance.

More specific points appear in chapters on "Succession of Bloom," in which appear lists of plants arranged according to time of bloom and height; in "Color in the Border," where an entirely new color theory is propounded based on psychological color effects, and in "Plants for Various Purposes and Locations."

Exceedingly practical are the numer-

ous drawings that suggest the manner in which the border can be adapted to diverse situations. Similarly useful are the six planting plans that show how the border should be laid out in horizontal sections, each devoted to plants of a particular season. A half-dozen fine half tones are used to illustrate as many concepts of border design.

The book has been made country-wide in its scope, with suitable suggestions for every climatic and soil condition found in the United States. The price of the volume, which consists of 256 pages and is cloth-bound, is \$2.50.

WEEK-END GARDENING.

"Week End Gardening," by Sterling Patterson, is one of the most recent garden publications of the Macmillan Co. It is a book for the amateur flower grower; never technical, it approaches from a fresh and human standpoint the business of creating and managing a small garden.

As a commuter himself, the author appreciates the problem of the garden maker whose time is limited. Labor-saving methods are explained. Practices which conserve time and energy are made clear. The book shows how the owner may not only beautify his property, but find contentment in so doing.

There are twelve chapters, one for each month of the year. Each chapter is subdivided into four sections, representing week-ends. In each week-end section is discussed a subject which is of special interest to the gardener at that time of the year. The book is illustrated with reproductions of photographs taken by the author in his own garden and with his amusing line drawings. There are 255 pages. Cloth-bound, the volume can be purchased for \$2.50.

EVERYMAN'S GARDEN.

On a recently issued volume bearing the title, "Everyman's Garden," the author's name is one familiar to horticulturists—Max Schling. Mr. Schling has already given evidence of literary capacity. In this latest work he achieves something that is as distinctive as the New York business which bears his name, the book giving clear indication of many of the characteristics and instincts which have undoubtedly led him to success as a florist and seedsman.

"Everyman's Garden" is worth the time of trade members to read. The story, told in pleasing manner, relates the gardening adventures of one Peter Martin, who retires from the city to a country estate and decides to develop his property. This central figure of the book passes through all those experiences that are likely to be the lot of anyone who takes up gardening. How he meets his problems is the meat of the story.

The book is unquestionably worthy for the horticultural instruction contained therein, even for those with some experience in planting activities. There are good subordination and elevation of minor and major points. There is an up-to-date tone to all the recommendations, with numerous unusual ideas cropping up. The material is adequately comprehensive, covering planting, landscaping, propagating methods, materials and countless other related subjects. The reader who desires instruction only from the work will find a complete index of subject material a convenient feature.

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The book contains 106 pages, attractively bound in a green cloth cover stamped with gold. Several helpful illustrations are included. The price set for the book by the publisher, the Macmillan Co., is \$2.

GOLDFARB BUYS AT SCARBORO.

Arcadian Rose Gardens, Inc., New York, a subsidiary of M. Goldfarb—My Florist, Inc., New York, has purchased part of the former Scarboro Nurseries, Ossining, N. Y., formerly operated by F. R. Pierson.

The deal was closed April 9, by the Westchester County Savings bank, Tarrytown, which had controlled the property as the holder of a mortgage since last August. A 20-acre section on which stand the greenhouses was sold, the bank retaining thirty-six acres, including land on Broadway, a nursery tract in the Scarboro cove and extensive riparian rights. The Scarboro Nurseries were founded by Mr. Pierson about 1892.

At a meeting at Oakland, Cal., of the Central California Nurserymen's Association reports on the legislative situation were an important part of the program.

BOOKS

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PLANTING SERVICE STATIONS.

Edward C. Vick, Newark, N. J., is contributing a series of three articles on "Beautifying the Service Station" to the monthly publication of the Shell Petroleum Corp., the Sign of the Shell. The first article, which appeared in the March issue, covered the preparation of soil; the second, in the April issue, discussed evergreen trees and shrubs for planting and the value of flower beds on service station grounds. He emphasized the use of zinnias in such beds. The final article will appear in the May issue.

The Current Season

W. N. Craig's Notes from New England

April was a peculiar month. The mean temperature averaged but little higher than that of March, although for Easter conditions were quite pleasant. There have been a marked deficiency in temperature and an excess of precipitation. The latter came in the form of snow, sleet and rain and gave the ground a better drenching than I ever remember at this season. While delaying sales for a time and making digging out of the question, the abundant moisture was a great asset, especially to those who had but recently heeled in quantities of nursery stock which had been in storage all winter. Rarely has it been possible to lift evergreens with better balls, and losses should be fewer than usual.

So far nurserymen appear to be well pleased with the way orders have been coming in and are more optimistic than in several years. The buying public yearly becomes better posted horticulturally and therefore more critical in what it purchases; this is as it should be. It is encouraging to note in a great proportion of the orders coming in this spring that the newer, rarer and more unusual plants are appealing to so many. This is noticed in the rose orders especially, where so many want to try Nigrette, Better Times, Princess Van Orange, Golden Climber, Easlea's Golden Rambler, Mermaid and The New Dawn, also in the requests for such shrubs as vitex, elsholtzia, caryopteris, enkianthus, symlocos, Hamamelis mollis, Cornus florida rubra and C. Kousa chinensis, fothergilla, magnolias, hybrid rhododendrons, Pieris japonica, sorbaria, neillia, hybrid lilacs, Japanese cherries, malus and azaleas. In the rock garden and perennial border plant section, gentianas, lewisias, saxifragas, asters, Korean chrysanthemums, phlox, hybrid hemerocallis, primulas, helioborus, anemones and violas are in particularly good demand. In lilies, the newer hybrid montbretias, tigridias in separate colors, ismenes and zephyranthes it is surprising to find such an increased and growing interest.

Demand for Roses.

It is evident that before the season is far advanced hardy roses are going to be more thoroughly cleaned up than for some years. Some of the more popular varieties are virtually unprocurable now, including such good sellers as President Herbert Hoover, Lady Margaret Stewart, Etoile de Hollande, Ville de Paris, Golden Dawn, Betty Uprichard, Mrs. Henry Morse, Edith Nellie Perkins, Margaret McGredy and Mrs. E. P. Thom. Hybrid teas easily remain the dominant sellers among roses. Hybrid perpetuals are barely holding their own, while polyanthas and climbers are in better demand than a year ago. Interest in the newer varieties is strong, and every variety which has received good publicity is being bought.

Orders are few today for Crimson Rambler, Dorothy Perkins, Hiawatha or Tausendschoen. In their stead are bought such climbers or ramblers as Jacotte, American Pillar, Dr. Van Fleet, Mme. Gregoire Staechelin, Mary Wallace, Dr. Huey, Paul's Scarlet Climber, Albertine and Silver Moon. What we need now is a race of everblooming

climbers which are at least as hardy as the aforementioned kinds; these we are gradually getting in The New Dawn, Princess Van Orange, Lemon Pillar, Easlea's Golden Rambler, Mermaid and one or two others. The call today is for the large-flowered type and away from the Dorothy Perkins and Excelsa section, just as the trend in hardy chrysanthemums is toward the larger and looser flowers, rather than the little tight pompons. Interest is growing in the moss, sweet briars, hybrid rugosas and showy species like Hugonis, xanthina, eae, Persian Yellow, Harrison's Yellow, Austrian Copper, Moyesii, spinosissima altaica and moschata. Many are eager to plant the old cabbage rose, York and Lancaster, gallica and others whose history dates back for centuries, all of which is interesting and cheering.

With such abundant rain as we had in April, about twice that of normal, heeled-in stock in the open never looked better. Winter losses in roses are again heavy, but climbers came through better, on the average, than a year ago.

Early Bloom.

April in its last few days gave us a burst of heat which, on one or two days, was strongly suggestive of July. The temperature for the month was 72 degrees below normal, for which those in the trade are profoundly thankful.

Forsythia ovata, as usual, bloomed first, as it did a year ago. Now intermedia spectabilis and primulinus are blooming splendidly, while a little inland there are hardly any blooms above the snow line. Daphne Mezereum was at its best just ahead of the forsythias, while such magnolias as stellata and Soulangeana were in full flower as the month drew to its close, being closely followed by the Japanese cherries. Azalea mucronulatum was in full flower, with Pieris japonica and floribunda. Among the herbs, arabis, Alyssum saxatile compactum, Anemone vernalis,

AMERICAN NURSERYMAN

drabas, Anchusa myosotidiflora, the sweet violets, pulmonarias, dicentras and Saxifraga cordifolia make welcome touches of color. From now on for many days there will be something new and interesting to cheer our hearts each morning, which gives that charm to commercial horticulture for those who really love their profession.

NURSERYMEN FEATURE FLOWERS

In California Show.

The sixth annual flower show of the Southern California Nurserymen's Association, or the Earl C. Anthony show, as it has been nicknamed because of its location in Mr. Anthony's automobile salesroom, Los Angeles, Cal., was truly a flower show of the first caliber this year, if one expects to see flowers at a nurserymen's show. This energetic group of nurserymen has striven every year to give the impression that a flower show can be staged through the medium of blooming plants from the nurserymen's stock as well as with cut flowers. There was not a single exhibitor at this year's show who did not feature blooming plants, and there was only one who did not have a display of blooming things almost entirely.

As the spectators entered the main door and were turned toward the left by courteous hosts, who were everywhere to assist the public, the first thing that met the eye was a gorgeous display of blooms. The Beverly Hills Nurseries, Beverly Hills, drew this spot this year and made the best of it with row after row of fine blooms. The narrow space was bordered at the front with pure white pansies, backed by colorful blue and red anemones followed immediately by gold ranunculi, which blended into an upward sloping row of pure yellow pansies. To set these flowers off properly, blooming viburnum and diosma were used at the rear.

Amaryllises Featured.

Immediately beyond the foregoing display came the always colorful exhibit of Howard & Smith, Montebello, who always feature their hybrid amaryllises. These flowers were staged behind a border of pure white cyclamens that extended the entire length of the exhibit. Gracefully drooping their leaves over the amaryllises were some specimen tree ferns. Accenting the whole effect were yellow callas.

The display of the Germain Seed & Plant Co., Los Angeles, was located at the end of the room and had as the feature a small conservatory filled with orchids that anyone could grow in such a simple greenhouse, along with calceolarias, anthuriums and ferns. Outside the greenhouse was a display of clivias, hydrangeas, cinerarias and fuchsias.

Roy F. Wilcox & Co., Montebello, exhibited beneath the balcony another of their displays of unusual ornamentals, set off by blooming spathiphyllums and clerodendrons, which held the attention of all the thousands of spectators that packed the show.

This year the entire center of the large room was worked up into five gracefully curved beds, the four outside beds being backed up to the four immense pillars that usually bother the nurserymen in staging their exhibits. Due to the new arrangement, the pil-

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lars were lost in the background of the four beds, which were entirely filled with Kurume azaleas from the Coolidge Rare Plant Gardens, Ltd., Pasadena. These graceful little plants, ranging from pure white to the deepest cherry red, can be used almost anywhere in the southland if they are given the proper drainage, some acid soil and, in some places, just a little protection from the winds off the ocean or from the hot sands of the desert.

In the center of these four graceful beds was another curved one that was assigned to the Johnson Water Gardens, Hynes. Harry Johnson, the president and major owner of these gardens, always stages a lovely exhibit wherever he goes. This year's display was a water scene, having flagstones bordering a pool, in the center of which was one of the firm's huge two-toned green taros. The pool was edged with *Primula veris*.

Rare Shrubs in Bloom.

Evans Gardens, Santa Monica, brought in a great many rare shrubs and not a single one was without bloom. Among the many interesting items were *Convolvulus Cneorum*, the newest member of the morning-glory family to be introduced to the southland; *Brunfelsia floribunda*, which always shows flowers of two distinct tones; kangaroo's-foot, or *Anigozanthos Manglesii*, and many other things.

Paul J. Howard's Horticultural Establishment, Los Angeles, made its entire set-up to feature its beautiful new strain of Lorraine-type hydrangeas that have created a sensation wherever shown this spring. The variety featured at this show was the new light blue one, *Celeste*. The pink variety, *Boufont*, took a back position at this show, as it had been featured at other exhibitions.

Outdoor Grill.

Armstrong Nurseries, Ontario, used an outdoor cooking grill as the center of their exhibit. The grill was well banked on one side with Pink Pearl rhododendrons and by the deeper pink *Cynthia* on the other side. On either side of the flagstone walk that led up to the grill were placed Rosita camellias and Snowdrift azaleas. Among the foregoing were many other fine Armstrong shrubs, and the whole display was accentuated by cinerarias.

The Rust Nurseries, Pasadena, placed an exhibit that looked like a corner from one of the large estates in Pasadena. It was a naturalistic setting wherein azaleas and rhododendrons formed part of the front border, with yellow callas and many flowering shrubs at the rear. Bursting up through the grass like croci was a border of begonias at the front edge of the triangular setting.

The Hagenberger Specimen Plant Gardens, Los Angeles, completed the list of exhibitors, building their entire display of plants for patios around several beautiful specimens of crown of thorns in full bloom.

AT BOSTON HOUSING SHOW.

Florists and nurserymen participated in the better housing exposition which was opened at the Herald-Traveler building, Boston, Mass., April 4. One of the most interesting displays in the show was the rock garden, with a rustic gar-

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den shelter and bench, installed by Tow Path Gardens, Inc., Hartford, Conn. To reach this garden spot, visitors passed along a display of evergreens, contributed by Bay State Nurseries, Inc., North Abington, Mass.

Among other trade members exhibiting were the William Sim Carnation Co., Saugus, showing potted carnations; Borowski Bros., Norwood and Rosindale, azaleas and ferns; James Wheeler & Son, Natick, callas; Schurman's Greenhouses, Reading, snapdragons; Strout's, Inc., Biddeford, Me., carnations, and Fuller & Sons, Woburn, snapdragons.

RECENT BULLETINS.

"Pasteurizing Soil Electrically to Control Damping-off" is the title of bulletin No. 651 issued by the New York state agricultural experiment station, Geneva, N. Y. Prepared by James G. Horsfall, the bulletin describes tests and explains results with pasteurizing equipment. It is explained that "The expression, 'to sterilize,' is commonly applied to soil, but it is particularly inaccurate when applied here. To pasteurize is preferable, because not all the organisms in the soil are killed."

The chinch bug caused considerable trouble last year. Circular No. 431 of the Illinois agricultural experiment station, Urbana, Ill., is entitled "Fighting the Chinch Bug on Illinois Farms."

To do a nursery and floral business, Larsen Nurseries, Inc., Greenburg, N. Y., has been incorporated, with capital of \$10,000, the papers being filed by R. H. Levett, White Plains, N. Y.

CATALOGUES RECEIVED.

[In writing for a copy of any of the catalogues reviewed below, please mention that you saw it described in *The American Nurseryman*.]

State Nursery & Seed Co., Helena, Mont.—"Year Book for 1935," consisting of 128 pages and a cover, wherein is listed a thoroughly representative group of flower and vegetable seeds and nursery stock in all lines. The cover is decorated with a color plate of Glorious Gleam Hybrid nasturtiums.

R. M. Kellogg Co., Three Rivers, Mich.—A broadside, illustrated largely in color, featuring the many novelties offered by this firm.

Schick Cactus & Succulent Nursery, Glendale, Cal.—An interesting wholesale price list of odd, rare and decorative succulents. Mention is made of a limited stock of rare and handsome euphorbias and of a cactus special of small rooted plants for 1 to 1½-inch pots.

Continental Nurseries, Franklin, Mass.—A retail offering of selected varieties of hardy perennials, ferns and grasses, among which there are many choice items. M. J. Van Leeuwen has been manager of the nurseries since its founding in 1903, a note states.

Rototiller, Inc., Long Island City, N. Y.—An illustrated descriptive booklet on the various models of the Rototiller cultivator; a substantial list of Rototiller users is also given.

Elk River Evergreen Co., Butler, Tenn.—Wholesale price list of woods-grown plants, among which are maples, azaleas, several evergreen items, small berry plants, hardy ferns, etc. The stock is priced per hundred and per thousand and is described as fresh-dug.

Bristol Nurseries, Inc., Bristol, Conn.—A retail catalogue offering a general nursery line that is especially interesting for the number of new items, including several recently developed Korean hybrid chrysanthemums, which are a leading specialty of the firm. Hardy asters and new choice day lilies, as well as a large group of rock garden favorites, support up-to-date lists of roses, evergreens, shrubs and fruit trees.

I. W. Scott Co., Pittsburgh, Pa.—An illustrated leaflet describing garden requirements, supplementing the firm's larger catalogue.

THE State Nursery & Seed Co., Helena, Mont., has been given a contract to landscape the Federal building, Helena.

Instructions in Planting

H. B. Tukey Suggests Advice Nurserymen May Give on Fruit Trees That Fail to Bear

How many times a year does this question bob up for answer: "I have a single plum tree which blossoms full each year, but never sets fruit. What can I do about it?" This is the complaint that all too frequently reaches nurserymen, farm bureau managers, colleges, experiment stations and friends and neighbors. Some one plants a single tree hoping to get fruit. Several years pass, and then comes disappointment when the tree, which has been so carefully taken care of, fails to set fruit.

Advancing on the theory that a satisfied customer is the best advertisement, what can nurserymen do to help in this regard? They can help by including in their catalogues certain items of information which will help relieve this situation, thus making their catalogues service mediums as well as advertising sheets. They can help by educating their salesmen so that they can impart some of the fundamental factors to prospective purchasers. They can help by answering letters of inquiry intelligently and correctly. The following paragraphs are written in the hope that they may be useful for just these purposes.

Of course, there are many reasons why a tree may fail to set fruit. First of all, probably, come insect and disease problems, which may so affect the vigor of the tree or so injure the fruit that no specimens are brought through to maturity. Besides this, there are factors of nutrition, poor drainage and lack of sufficient fertility, to say nothing of frost injury. The remedies for these situations are obvious; namely, proper spray schedule for insect and disease control, proper attention to drainage, use of fertilizers and avoidance of situations where frost and winter cold are hazards.

Problem of Pollination.

But quite aside from these factors, which really deserve a discussion by themselves, the problem that most frequently calls for attention from the amateur or home gardener who plants a single tree and then fails to secure fruit is the problem of poor or improper cross-pollination. As a general rule, among deciduous fruit trees of the north temperate zone, such as the apple, peach, cherry, plum and pear, no fruit will be formed unless seed is formed. In turn, no seed will be formed unless fertilization is accomplished.

There are, of course, two essential parts to a flower; namely, the pistil, or female part, which develops into the fruit, and the stamens, or male part, which develop the yellow pollen grains so familiar to anyone who has pressed his nose into an open flower. Before seed can be formed, it is necessary for pollen grains to be placed at the tip of the pistil and for the grains to grow down and effect fertilization, resulting in the formation of a seed and a fruit. In nature, this act of transferring pollen grains to the pistil is called pollination and is accomplished by various bees and insects. It is for this reason that many orchardists place hives of bees in their orchards.

There are many ramifications to this problem of pollination. For example, a fruit variety may produce poor pollen and may, therefore, be unable to effect fertilization, resulting in no fruit. Again, a variety may produce good pollen, but this pollen may not be compatible with the variety that produced it, so that no fruit is formed. Finally, a variety may produce good pollen which will be effective in fertilizing one variety, but will not be effective in fertilizing another.

As a general proposition, however, sweet cherries, plums, apples and pears fall into the class of fruits which require the pollen from some other variety to accomplish fertilization and fruit set. There are some exceptions to this rule, but, in general, it is a good one to follow. In addition, certain varieties of sweet cherry and pear are known which will not pollinate each other, so that even though an orchard of two or three varieties may be set together, no fruit will be set. On the other hand, sour cherries and peaches will generally set good crops with their own pollen.

If anyone is at all skeptical about these facts, let him take paper bags and place them over unopened flowers of the sweet cherry, pear, plum and apple and leave the bags there until

full bloom is past. He will find that the blossoms under the bags fail to set as fruit. On the other hand, bags placed over unopened blossoms of most sour cherry and peach varieties will be found to contain fruit. This is because, as it has already been stated, the sour cherry and peach will, in general, set fruit with their own pollen, while the apple, pear, cherry and plum will generally not set fruit with their own pollen.

Along this line, it is an axiom in fruit circles that the highest-producing orchards in years past have been those which have been interplanted with a number of varieties. Nurserymen can find some solace in the fact that, although they may have been accused of substituting varieties, perhaps they were angels in disguise in that they thus placed several varieties in an orchard and so provided proper varieties for pollination! Anyone who has visited commercial orchards, which are in solid blocks, will have noticed the much larger crop of fruit in the vicinity of a misnamed tree, which provided proper pollination for the trees in its immediate neighborhood. The writer recalls vividly a 40-acre block of Kieffer pears in Illinois which set few fruits except in the close proximity of two or three interplanted odd varieties.

In the next issue I shall discuss special pollination problems with each of the representative classes of fruits and with particular varieties.

The first part of April, E. B. Chenoweth, of the Mount Vernon Nursery, Mount Vernon, Wash., shipped a carload of Colorado blue spruce to Michigan. The facilities of the nursery have grown steadily, until now the firm has an area of twenty-eight acres.

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LANDSCAPERS' AGREEMENT.

Minimum Prices Set at Columbus.

A schedule of minimum retail prices, covering supplies, labor and plants, was given general approval by the members of the Columbus Landscape Association at its March meeting in Columbus, O. Mimeographed copies of the schedule have been distributed, bearing the notation that the figures represent minimum prices only and should not be considered as selling prices.

The schedule adopted was based largely on the minimum price agreement to which the members of the Greater Cincinnati Nurserymen's Association subscribed for a period of six months beginning last January. A few changes were made by the Columbus committee, composed of G. Bret Slemmons, Dallas Dupre, Jr., and G. Walter Burwell.

Under supplies are listed fertilizers, manure, peat, topsoil and sodding. Manufacturers' list figures for fertilizing products hold. For loam topsoil, a \$2.50 base was set for the first cubic yard, with a slightly smaller rate on additional quantities. Sodding varies from 20 to 30 cents per square yard, depending on the quantity purchased.

Labor.

For labor, a rate of 75 cents per hour is set as a minimum for general landscape work, exclusive of maintenance labor, which is based on 60 cents per hour. The minimum labor charge, except for work in connection with delivery of stock, is \$1.

For flowering shrubs, distinction is made between "common" and "better" varieties. The first category includes such items as barberry, lonicera and philadelphus; the second group mentions among others evonymus, ilex verticillata and halesia. Shrubs not specifically named, it is stated, are to be placed in the classification they nearest resemble in usage, scarcity, difficulty of handling, cost of production and other factors. In the three usual sizes offered, the common varieties are priced at 40, 50 and 60 cents each, with a small discount for quantities up to 100. The better varieties are priced at 50 cents, 75 cents and \$1 each in the standard sizes.

Three classifications are used for shade trees, mostly with naked roots. Soft maples and poplars represent the common types; elms and sycamores are among the better varieties, and hard maples, horse-chestnuts and tulip trees are some of the best ones specified. Four sizes of trees are priced, 8 to 10-foot up to 2½-inch caliper, the price range being from \$1 to \$3 each in the lowest group, \$1.50 to \$4 in the second class and \$2.50 to \$6 in the top classification. Trees not named are to be classified in manner similar to that recommended for shrubs; the caliper measurement must be taken six inches above the collar. A minimum planting charge of \$1 is specified.

Lombardy poplars are scheduled in three sizes, with 50 cents each set for the smallest grade, 6 to 8-foot. Abelia, mahonia and pyracantha are priced in one size in the broadleaf evergreen group.

Evergreens.

Other evergreens are classified in three groups, representing balled and burlapped stock. Arbor-vitæ are

FRUIT TREES

PEACH

18 to 24 ins., 4c; 2 to 3 ft., 6c; 3 to 4 ft., 8c

Alton	Crawford's Late	Heath	Red Bird
Brackett	Early Rose	Hiley	Salway
Carman	Elberta	Indian	Slappy
Champion	Golden Jubilee	Krummel's	South Haven
Crawford's Early	Hale	Mayflower	Shippers Late Red

Stump

APPLE

2 to 3 ft., 5c; 3 to 4 ft., 8c; 4 to 6 ft., 10c;

2 yr., 3 to 5 ft., 10c; 2 yr., 4 to 6 ft., 12c

Albamarle Pippin	Delicious	N. W. Greening	Winesap
Ben Davis	Fall Cheese	Rome Beauty	Yellow Transparent
Bonum	Jonathan	Williams Red	York Imperial

New Red Delicious

CHERRY

3 to 4 ft., 15c; 4 to 6 ft., 20c

Bing	Lambert	Black Tartarian	Early Richmond	Governor Wood
		Large Montmorency	Napoleon	

Cumberland Raspberries, \$10.00 per thousand

English Walnut, 2 to 3 ft., 45c

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classed as common; most of the junipers are listed among the better varieties, and firs, hemlocks and yews are among the best forms designated. The ranges in price are \$1 to \$2.50 for the ordinary forms, in the usual sizes; \$2 to \$3.50 in the better group, and \$4 to \$8 in the best class.

Three types of privet and barberry are scheduled for hedge material, the cheapest being California privet, 18 to 24-inch, at \$7 per hundred; the same size of barberry is \$20 per hundred.

Northern-grown roses, 2-year field stock, are priced at 75 cents each for hybrid teas and perpetuals, naked root or potted. Climbers and polyantha varieties are rated at 65 cents in similar quality. Five or more are subject to a discount.

Perennials in common varieties are figured at 20 cents each, with discounts applying to three or more. Irises and peonies are not included among the perennials and the prices are not held to apply in bidding on uniform specifications. Three ground covers — English ivy, pachysandra and myrtle — are priced in the schedule, also.

FOUR firms have been given contracts to supply trees and shrubs for Administration City, a model town at Coulee dam, Wash. The firms are the Columbia & Okanogan Nursery Co., Wenatchee, Wash.; the Krause Nursery & Greenhouse, Spokane; Malmø & Co., Seattle, and J. J. Bonnell, Seattle.

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Herbaceous Perennials

C. W. Wood Comments on Less Common Varieties of Hardy Plants Deserving Attention

OUTSTANDING ROCKERY PLANTS.

It would be folly, of course, to point out any one set of rock garden plants as the absolute best. Even if it were not for the personal likes and dislikes of gardeners, the widely varying climates of the different parts of the country would make impossible such a selection. Considering all these facts, I should not care to attempt such an assignment, but so many requests have been received for a list of that kind, a dozen or so outstanding plants will be suggested as a start in that direction. It should be mentioned, however, that the ones selected have been chosen for reasons other than their rareness or difficulty of cultivation. Rather, they are recommended because they are so easily grown any gardener with a little elemental knowledge of plant culture can plant them with every assurance of success. A further recommendation in most cases is the fact that they bloom over a long period. With these few qualifying statements out of the way, let us examine a brief list of our most outstanding rock garden plants.

BELLIS ROTUNDIFOLIA.

The greatest value of the tiny plant, *Bellis rotundifolia caerulea*, is its long-flowering habit, which in northern Michigan extends over practically the entire summer and autumn. A plant or two, owing to the small size, makes no impression at all, but a well protected, sunny plain of gritty soil containing a dozen or so will make a lovely picture. Since it comes from the Atlas mountains of northern Africa, one would naturally expect tenderness to cold, but it gives no trouble here if it has perfect drainage and is protected from the cold winds. Its small, pale blue daisies come on 2-inch stems, and the species is easily grown from seeds, self-sowing quite freely in congenial surroundings.

CAMPANULA.

The genus *campanula* contains many gems for the rock garden, though many of the best are too hard to grow to be put in our present list. Two, however, *C. Bellardii* Miranda and *C. Portenschlagiana*, are both easy enough and beautiful enough to have our attention. The first of these is the easiest of the worth-while alpine species that I have seen, growing into mats of light green foliage, over which hang pale blue bells on 2 to 4-inch stems from June until August. Its culture is of the simplest, the variety doing well in any gritty soil in sun or part shade, though a northern exposure may be needed where the summers are extremely hot. *C. Portenschlagiana*'s worst fault is its name, but it does lack some of the former's ability to resist hot sunshine. Here we grow it on a north wall and in slat-covered frames, where it blooms from June to frost, its blue purple bells hanging from 6-inch stems. Both are readily increased from cuttings from forced plants indoors in winter or from outdoor plants in early spring.

CORONILLA CAPPADOCICA.

It is easy to imagine choicer plants than the crown vetch, *Coronilla cappadocica*, but its habit of producing lovely, fragrant, yellow pea flowers all during the trying days of late June and July and into August, together with its easily satisfied requirements, gives it a place in our present list. It makes a broad mat of slightly glaucous leaves, with flowers on stems six inches, or so, high. A sunny situation in common garden soil will suit it. It is so easily grown from seeds that no other form of propagation is likely to be needed, though divisions and possibly cuttings may be used.

CORYDALIS LUTEA.

Few plants with the merit of the little fumitory, *Corydalis lutea*, that have been in American trade so long as it has, are so rarely seen in our nurseries. That it is rare in gardens, also, is apparent if a little search is made. Just why this condition prevails is hard to understand unless growers have found its propagating habits erratic. Under garden conditions it often self-sows freely, and sometimes seeds sown in an outdoor frame in fall germinate to a seed, yet at other times I have had an ounce of seeds produce not a plant. The reason for this behavior is not apparent, but this is probably the cause of the plant's scarcity. A discussion of this point in the columns of *The American Nurseryman* would interest all growers of herbaceous plants.

The plant is at home in almost any part of the garden, sun or shade, dry soil or moist, seeming to make little difference to its care-free disposition. Another factor that puts it in our present list is its ability to produce its golden blooms above its ferny foliage from spring until the snows of late autumn.

ERODIUM CHAMÆDROIDES.

If the ability to flower over a very long period is any recommendation for a plant, the tiny heron's bill, *Erodium chamædryoides* roseum, should meet with universal approval. Add to the foregoing a plant that makes dwarf tufts of glossy leaves which support an

incredible number of soft pink flowers on slender, 2-inch stems from May until heavy frosts, and one has something really out of the ordinary. Nor is that all in its favor, for the plant is fool-proof in any well drained soil in sun. Cuttings root readily in the usual way, and clumps pulled apart in early spring form an easy means of increase.

LOTUS CORNICULATUS.

The single-flowered form of *Lotus corniculatus flore-pleno* was once recommended in agricultural literature as animal forage and has escaped from cultivation, but the double-flowered forms seem much less known. If you have had or have seen the single one and did not like it or its behavior, do not condemn the present subject on that account. The variety *flore-pleno* is a good carpeting plant for any dry, sunny spot where its bluish green, legume foliage and double, bright orange, pea-like flowers can be used to advantage. It is not a plant that can be put near choice, delicate neighbors, for its prostrate stems, which root as they spread, would smother its gentler companions. If, however, the situation is too hot and dry for most plants, this lotus will cover the space with its ground-hugging mantle and give freely of its flowers from June until autumn. It must be propagated from cuttings or division, as it does not make seeds.

PAPAVER NUDICAULE.

The Iceland poppy is too well known to need extended comment at this time except to call attention to the fact that its ease of culture and long-blooming habit force one to consider it in a list of this kind. Modern strains, such as *Fakenham*, *Gartref* and *Santa Maria Inn*, open up new visions of beauty little dreamed of a generation ago.

POTENTILLA TONGUEI.

Some good alpine potentillas are hard to grow, while others that are easy to grow are hard to make flower, but in *P. Tonguei* we have an easy doer that blooms prodigiously all summer. The plant, as I know it, makes a tuft of strawberry-like leaves, from which grow long runners, carrying the apricot, red-centered blooms, over an area of two feet or more. Its only need is for a sunny situation. There may be some way of rapid propagation from cuttings, but I have never found a method that gave a reasonable strike under frame conditions and find no reference to it in the literature. Divi-

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sion is not easy, owing to the absence of fibrous roots, though it may be accomplished by using a safety-razor blade to shave off a part of the top root with each runner. There is no question in my mind that the plant will become popular when stock is available.

SCABIOSA GRAMINIFOLIA.

Scabiosa graminifolia is another one of the all-season bloomers which calls for our attention. In addition, this plant thrives in any sunny spot that has perfect drainage, a combination of virtues that are matched in all too few plants. From a tuft of silvery leaves spring 8-inch stems bearing light lavender scabious flowers from June until winter. It is propagated from seeds or divisions.

SEDUM.Because a few species of sedum are so easily propagated, every beginner in plant growing hawks them about our markets, thereby giving the entire genus a bad name in garden circles. Sedum contains, nevertheless, a few species that should find a place in every list of easily grown, outstanding rock plants. *S. dasyphyllum*, in one or more of its forms, and *S. Sieboldii* are near the top of their class, so far as garden value is concerned, and find a widening circle of admirers as the years go by. Another species, *S. Tartarinowii*, which is new to American trade, will bear watching. All are easily reproduced from cuttings.**SILENE ALPESTRIS.**The small amount of space left must be devoted to *Silene alpestris*, not because it is spectacular in any way, but because it so completely measures up to the standard set at the beginning of these notes. It, too, is easy to grow, propagates readily and blooms from spring until autumn. Here it does well in sun or shade in common rock garden soil, but I am told that it reacts better in some shade if the climate is hot. It spreads into broad mats of shining green leaves and throws up 4-inch stems carrying small, white flowers. Propagation is by seeds, divisions or cuttings.**ASTER PORTERI.**

The present tendency toward wall gardening finds American nurseries often lamentably weak in plants which are suited to wall culture. It is, then, a pleasure to find a good wall plant in a genus (aster) that is noted for its lack of such material.

Aster Porteri, when brought into the garden, is essentially a wall plant, showing off as one to a good advantage, while in the flat rock garden it is lost among other and showier plants. It gets from six to ten inches high, bearing an abundance of small white asters during the last half of July and August. In my garden it does well in the wall with exposures to all points of the compass and in any common soil. In fact, it is so accommodating that any gardener should be able to get along with it. The variety is easy to grow from seeds and it may be grown from cuttings of fresh growth if need be.

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BLACK LOCUST.

In recommendations for planting in the treeless belts of the western parts of the United States, the black locust, *Robinia pseudacacia*, has been given prominence. As a combination shelter, commercial and ornamental tree, few, if any, subjects rival it.

The black locust is native to the slopes of the Appalachian mountains from Pennsylvania to northern Georgia. It has been widely planted, especially east of the Rockies. It was introduced into the extreme west by the early settlers, where it has been a favorite, more particularly in Utah, southern Idaho and eastern Washington and Oregon.

The black locust adapts itself to a wide range of soil conditions, provided the site is not too wet, though it thrives on rich, well drained loams. It is a tree that demands rather full light, and for this reason it cannot be expected to thrive under the shade of other trees. Although native to regions of abundant rainfall, it is surprisingly drought-resistant in the dry belts of the west, especially after the first two or three years when once established.

The symmetrical form of the black locust and its dark green foliage, which turns a pale yellow in late fall, together with its rich growth of white flowers, appearing in June, make this tree highly useful for ornamental purposes.

The wood of the black locust is straight-grained, strong, dense, hard, readily seasoned, holds its shape well, does not check and is exceedingly durable in contact with the ground. It is used in bridge construction, the manufacture of vehicles and implements, in shipbuilding and for fence posts. It is one of the best woods known for use as tree nails and is in great demand

for this purpose. More recently the black locust has come into demand for insulator pins, used in electric light and telephone construction. Owing to its great durability in contact with the soil, black locust is more generally used for fence posts than for any other purpose. The average life of locust posts is from twenty-five to thirty years. Farmers make constant use of the black locust for farm repair materials, such as neck yokes, wagon tongues, doubletrees, reaches, etc.

The black locust is easily propagated from seeds. The best soil for the purpose is a sandy loam, though any good pliable soil will do. The seeds should be rather thick in the row, since probably not over fifty per cent of them will grow, and not all of them will produce suitable plants.

The depth and covering of the seeds are both very important. No certain depth can be stated that will apply in all conditions. The seeds must be deep enough to make sure that the wind does not dry the soil out about them and yet not so deep that they cannot get through. About two to three inches is usually about right. After the seeds are drilled in, the soil should be firmed (not packed) on the sides of the drill row, but not on the top, as the soil on the top should be left loose so that the sprouts can readily come up through it. The latter part of April, or even the first part of May, is a good time to plant the seeds.

The ground should be kept thoroughly cultivated throughout the summer, but do not use too much water, as this will stimulate too rapid growth, and the stock will not be so hardy as if it grew more slowly. In any case, stop the irrigation by the middle of August so as to slow down the growth and allow the young trees to harden up for winter.

A pound of black locust contains about 26,000 individual seeds.

TROLLIUS FROM SEEDS.

The best time to start trollius seeds is in July, as soon as one can get freshly harvested seeds. Sow these in frames, keep the soil moist and they will usually germinate and come up in three to four weeks. As soon as large enough, the seedlings may be transplanted to the open field.

Within a few weeks after the seeds are harvested they harden and, unless sown in the summer, take a long time to germinate and usually require freezing and thawing to grow at all, according to a cultural note in a catalogue of the Joseph F. Martin Perennial Nurseries, Painesville, O. Seeds purchased in the fall from the previous summer's harvest are good but slow. They should be sown in flats outdoors in November or early December. Leave them outdoors until February when they can be brought into the greenhouse under a temperature of 45 to 55 degrees. The soil will gradually thaw out, and the seedlings should be up in three weeks. There should be plenty of moisture in the soil to germinate the seeds.

Move the seedlings into pots and keep the plants growing. One can usually pot them up in March and set them outdoors in April. After the seeds germinate, it is important to keep them growing.

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OBITUARY

Dr. Spencer S. Sulliger.

Dr. Spencer S. Sulliger, aged 81, a past president of the American Rose Society and the curator of the international rose test garden at Portland, Ore., for five years, died April 15 at his home in Tacoma, Wash., after a week's illness with bronchial pneumonia.

Dr. Sulliger was a retired Methodist minister and served as district superintendent of the Puget Sound conference for twenty-one years. In 1916 he went to Calexico, Cal., with the Washington National Guard, in which he was commissioned a captain and appointed chaplain in 1900. In spite of his age, he made special application to go overseas when this organization became a part of the A.E.F., and he was permitted to continue in service. In July, 1918, he was honorably discharged from the army. He reentered the ministry at Kent, Wash., later and, after his retirement in 1924, resided in Tacoma. Dr. Sulliger was the first official representative of the American Rose Society to the National Rose Society of England, and his active interest in rose culture won him prominence. He is survived by his widow, Rose D. Sulliger; a daughter, Mrs. Charles M. Hoopes, Portland, Ore., and a sister, Mrs. O. Fidler, in Ohio.

Leonard L. Kellogg.

Proprietor of a nursery and hatchery at Alvin, Tex., Leonard L. Kellogg, aged 66 years, died there at his home recently, after suffering with ill health for three years.

Mr. Kellogg was born in Wisconsin, going to Alvin in 1908. He started a nursery and planted many orchards, in experiments to discover strains of fruits adapted to the region, and also established a chicken hatchery. His widow and three children survive.

James Muir.

James Muir, employed as a nurseryman by Brown Bros. & Co., Ltd., Vancouver, B. C., died in early March at his Vancouver home, and funeral services were held at the chapel of Nunn & Thomson, with burial in the Masonic cemetery, Burnaby.

Mr. Muir was born in Scotland and went to Vancouver twenty-seven years ago. He was manager of the former Terminal steamship farm on Bowen island and later joined Brown Bros. & Co., Ltd. He is survived by a widow.

A. J. McClain.

The Rev. A. J. McClain, proprietor of the Lone Oak Nursery, Heiskell, Tenn., and a Baptist minister, died April 17, at his home, after an illness of eight weeks. He was 57 years old.

The Reverend McClain is survived by his widow, Mollie; five sons, three daughters, a brother, Lee McClain, Knoxville nurseryman, and two sisters. Funeral services were held April 18, at the Grace Baptist church, with burial at Bethel cemetery. Members of the Dixie council of the Junior Order, to which the deceased belonged, had charge of services at the grave.

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1	520 Cl. American Beauty red	1 1/2	15c	730 Ada
1	480 Cl. Baby Rambler, everblooming	1 1/2	12c	500 Burk
1	2070 Cl. Baby Rambler, 2	6c	500 Burnett	
1	400 Crimson Rambler, xx	12c	500 Bates	
1	700 Crimson Rambler, .1	12c	450 Bell	
1	600 Dr. Van Fleet, bush, .1	15c	520 Chestnut	
3	480 Dr. Van Fleet, .1	15c	470 Clifton	
1	720 Dr. Van Fleet, .1 1/4	10c	420 Congress	
1	920 Dorothy Perkins, pink	1 1/2	11c	520 Camden
1	470 Gardenia, yellow, .1	15c	420 Duke	
1	800 Gardenia, .1 1/2	10c	460 Davis	
1	550 Glendale, yellow, .1	15c	370 Doctor	
1	200 Staechelin, Spanish Beauty, xx	15c	380 Daniel	
1	700 Staechelin, .1	15c	650 Diamond	
2	700 Paul's Scarlet Cl. 1	15c	650 Edon	
2	400 Paul's Scarlet Cl. .1	15c	410 Empire	
2	500 Paul's Scarlet Cl. 1 1/4	10c	450 Eugene	
1	310 Persian Yellow, bush, .1	15c	300 Foster	
1	400 Primrose, .1	15c	340 Fern	
3	400 Red Explorer, red, everblooming	1 1/2	12c	485 Fulton
1	400 Silver Moon, .1	15c	440 Frank	
1	420 Scorchers, new red, .1	15c	460 Gertrude	
1	640 Scorchers, .1 1/4	10c	430 Gibson	
1	600 White Dor. Perkins, .1	11c	380 Gates	
1	85 Mme. Plantier, xx	12c		
1	130 American Pillar, .1	12c		
1	20 Crimson Rambler, .1	12c		
1	160 Sir Thos. Lipton, .1	11c	430 Haven	
1	320 Harrison's Yellow, .1	15c		

ROSES—Continued				
Box	Each	Variety	Grade Each	Wt. Code
	1	170 Sir Thos. Lipton, .1	11c	420 Hortense
	1	580 Paul's Scarlet, .1 1/4	10c	
	1	200 Scorchers, .1 1/4	10c	440 Helen
	1	380 Glendale, .1 1/4	10c	
	1	180 Gardenia, .1 1/4	10c	
	1	300 Primrose, .1 1/4	10c	390 Hilliard
	1	200 Dr. Van Fleet, .1 1/4	10c	
	1	240 Jacotte, .1 1/4	10c	300 James
	1	1530 Marie Gouchault, .2	6c	
		630 Excelan, .2	5c	450 Joyce
		870 Gardenia, .2	7c	
		300 Glendale, .2	7c	445 Julius
	1	510 Hansa, .2	5c	
		360 Sir Thos. Lipton, .2	5c	
		360 Belle Poitevine, .2	5c	
		150 Sarah Van Fleet, .2	7c	420 Louise
		420 C. F. Meyer, .2	7c	
		240 Amelia Gravenaux, .2	7c	
		90 F. J. Grootendorst, .2	7c	
		120 Harrison's Yellow, .2	7c	300 Langdon
	1	840 Edith Cavell, dark red Baby, .1	17c	310 Martha
	1	610 Girty, new red Baby Rambler, .1	17c	390 Maurice
	1	80 Triomphe Orleans, .xx	17c	
		60 Chatillon, .xx	17c	
		40 Chatillon, .1	17c	240 Malden
	2	13200 Multiflora, de-eyed understock liners for this summer budding; medium, \$14.00 per 1000, .		500 Norbert

SHRUBS

1	1080 Buddlein Farquhari, dwarf; 18 to 24 ins.,	8c	000 Samuel
1	1110 Buddlein Farquhari, 12 to 18 ins.,	6c	340 Sylvester

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24x24 ins., 9.50	40x40 ins., 25.75

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6 ft. $\frac{1}{2}$ to $\frac{3}{4}$ in. diam.	400	10.50
7 ft. $\frac{1}{2}$ to $\frac{3}{4}$ in. diam.	250	11.00
8 ft. $\frac{1}{2}$ to $\frac{3}{4}$ in. diam.	200	9.50
MEDIUM WEIGHT		
2 ft. $\frac{1}{2}$ in. diam.	1000	5.50
3 ft. $\frac{1}{2}$ in. diam.	1000	6.00
4 ft. $\frac{1}{2}$ in. diam.	1000	7.00
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